

VIOLET BANK
MUSEUM REHABILITATION – PHASE I
303 VIRGINIA AVENUE COLONIAL HEIGHTS, VIRGINIA

PROJECT MANUAL



SEPTEMBER 1, 2020

MESICK
COHEN
WILSON
BAKER
architects

388 BROADWAY
ALBANY, NEW YORK 12207

5525 OLDE TOWNE ROAD, SUITE B
WILLIAMSBURGH, VIRGINIA 23188

**VIOLET BANK
MUSEUM REHABILITATION – PHASE I**

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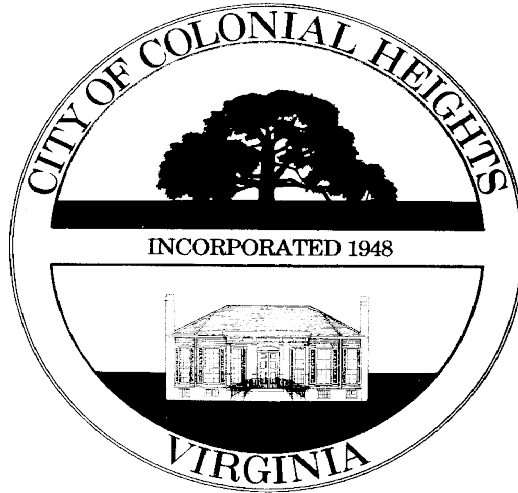
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CITY OF COLONIAL HEIGHTS, VIRGINIA



INVITATION FOR BID: # 20-102302-1113 VIOLET BANK MUSEUM REHABILITATION – PHASE I

BID OPENING DATE: OCTOBER 23 2020, 2:00 PM

CITY OF COLONIAL HEIGHTS CONTACTS:

CITY REPRESENTATIVE: CRAIG SKALAK, DIRECTOR OF PARKS & RECREATION
OFFICE: 804-520-9224, CELL: 804-922-0048
skalakc@colonialheightsva.gov

PURCHASING AGENT: LARRY MELVIN
OFFICE: , 804-520-9333, CELL: 804-895-3316
melvinL@colonialheightsva.gov

Architect: Mesick Cohen Wilson Baker Architects
Jeffrey Baker

City of Colonial Heights
 Finance/Purchasing Department
 201 James Avenue -2nd Floor – P.O. Box 3401
 Colonial Heights, VA 23834-9001
 Larry H. Melvin, Purchasing Agent
 (804) 520-9333 Fax (804) 524-8723
 MelvinL@colonialheightsva.gov

September 18 2020

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Sealed bids, subject to the plans, specifications and conditions contained herein and attached hereto, will be received at the above office until, but no later than **2:00 PM EDT, Friday October 23 2020**, for the **Violet Bank Museum Rehabilitation – Phase I, located at 303 Virginia Avenue, Colonial Heights VA**

Your bid to be considered must be submitted on copy of this Invitation to Bid in the places provided. Please keep a duplicate copy for your records. Bidders shall sign this form in the spaces provided without detaching from rest of bid and must return bid in its entirety to the above noted office/address. Bids shall be returned in a sealed envelope marked with the above Invitation Number, Bid Date and Project Name.

Time is of the essence, and any bid received after the announced time and date for submittal, whether by mail or otherwise, will be rejected. It is the sole responsibility of the bidder for ensuring that their bids are stamped by Purchasing Department personnel or designated personnel before the deadline outlined above.

Nothing herein is intended to exclude any responsible firm or in any way restrain or restrict competition. On the contrary, all responsible firms are encouraged to submit proposals. The City of Colonial Heights encourages all businesses, including minority and women-owned businesses to respond to all invitations to Bid and Request for Proposals.

All items shall be bid as specified or an approved equal unless the item specifically states no substitute. If bidding other than specified, complete specifications on each item quoted upon must be submitted with bid. Failure to comply with this requirement will be cause for rejection of bid.

No bid may be withdrawn after the scheduled closing time for receipt of bids for ninety (90) calendar days except as provided in Section 2.2-4430, Procedure 1, Code of Virginia, which states the bidder shall give notice in writing of his claim to withdraw his bid within two (2) business days after the conclusion of the bid opening procedure and shall submit original work papers with such notice.

Any contract amount over \$25,000.00, the contractor must supply the Purchasing Department a copy of their Colonial Heights Business License.

Questions relating to this Invitation for Bid should be directed to Mr. Larry H. Melvin, Purchasing Agent, telephone (804) 520-9333, melvinL@colonialheightsva.gov. Questions relating to the Nature of Services and/or additional information should be directed to Mr. Craig Skalak, Director of Parks and Recreation, Office: 804-520-9224, Cell: 804-922-0048, skalake@colonialheightsva.gov

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Examination of Facilities – Mandatory Pre-Bid Conference.

It shall be the full responsibility of all bidders to conduct a thorough and complete examination of the field conditions prior to submitting their bids. Failure of bidders to completely familiarize themselves with the conditions and requirements prior to submission of bid, shall in no way relieve the contractor of the responsibility of performing in such a manner as to meet or exceed the intent of the specifications. **A pre-bid conference will be held at the Violet Bank Museum 303 Virginia Avenue, Colonial Heights VA on Tuesday October 6 2020 at 10:00 AM. The City's architect will be on site to talk about the project and answer any questions. Any questions after the pre-bid needs to be emailed to Larry Melvin, City Purchasing Agent, melvinL@colonialheightsva.gov by Wednesday, October 14. An addendum will be issued to ask all questions.**

Time Limit to Commence and Complete Work

The successful bidder shall commence work within seven (7) days after the Notice to Proceed is given to him by the City. **Once the Notice to Proceed has been issued, the successful bidder shall complete all the work by May 1 2021.** Liquidated damages, in the amount of three hundred & fifty dollars (\$350) will be assessed for each and every calendar day that the work remains uncompleted.

Guarantee of Work

The contractor shall assemble and duly guarantee all warranties as required by these specifications. He shall assemble and deliver to the City all bonds, guarantees, releases, etc. required by these specifications before final payment is made.

The contractor shall guarantee all work against defective workmanship and materials for a period of one (1) year after acceptance of the project the City. The contractor at no cost shall make any equipment or work found to be faulty during this period good to the City.

Proprietary Information

The Code of Virginia states: "Trade secrets or proprietary information submitted by a bidder, offeror, or contractor in connection with a procurement transaction shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the bidder, offeror, or contractor must invoke the protections of this section prior to or upon submission of the data or other materials, and must identify the data or other materials to be protected and state the reasons why protection is necessary."

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Minority Bidders

The City of Colonial Heights Purchasing Department encourages all businesses, including minority and women-owned business to respond to all invitations to Bid and Requests for Proposals.

Availability of Funds

It is understood and agreed between the parties that the City of Colonial Heights shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.

Choice of Law and Venue

Any disputes under a resulting contract, that cannot be resolved between the City of Colonial Heights and the contractor, must be resolved in the Circuit Court of the City of Colonial Heights. Any resulting contract shall be governed by the laws of the Commonwealth of Virginia. The contractor shall comply with all applicable federal, state and local laws and regulations.

Bid Guarantee - (Bid Bond Form Provided Must be Used)

Each proposal must be accompanied by a certified check equal or a bid bond equal 5% of the bid amount.. Such Bid Bond or check shall be submitted with the understanding that it shall guarantee that the bidder will not withdraw his bid for a period of ninety (90) days after the scheduled closing time for receipt of bids, and that if his bid is accepted, he will enter into an agreement with the owner in accordance with the Form of Agreement as indicated herein. Any mistakes or error on the part of the bidder in preparing his bid confers no right upon the bidder to withdraw his bid after the designated time in said Contract and give stipulated Guarantee Bond within fifteen (15) days after written notification of award, the bidder in any particular hereof. Checks will be returned to the unsuccessful bidders promptly after it is determined who the successful bidder is and the award has been made.

Noncollusion Affidavit of Prime Bidder – (Form Provided Must be Used)

Each proposal must be accompanied by a properly executed and notarized copy of the Non-collusion Affidavit of Prime Bidder.

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Guarantee Bond – (Form Provided Must be Used)

If awarded the contract, the contractor shall furnish a performance bond and a labor and material payment bond, in the amount of the total contract price. (2 separate bonds) These bonds will stay into effect, until the one year warranty period is complete. The performance bond and labor and material payment bond shall be approved by the City Attorney.

In lieu of a bid, performance or payment bond, a bidder may furnish a certified check or cash escrow in the face amount required for the bond. Upon approval of the City Attorney, a bidder may furnish a personal bond, property bond or bank or saving and loan associations letter of credit on certain designated funds in the face amount required. Approval shall be granted only upon a determination that the alternative form of surety affords protection to the City equivalent to the corporate surety's bond.

The contractor **may** require as part of the agreement between the subcontractor and the contractor, a payment bond with surety thereon in the amount of 100% of the work sublet to the subcontractor. Each such bond shall be constructed, regardless of language, as incorporating, within its provisions, the obligation to pay those persons who furnish labor or material as aforesaid; provided however, that subcontracts between the Contractor and the manufacture or a fabricator shall be exempt from the provision required a payment bond and provided further that subcontracts for less than \$10,000 are also exempt hereunder.

Other Contract Documents – (Forms Provided Must be Used)

The Hold Harmless Agreement and Non-collusion Affidavit of Subcontractors shall be submitted by the successful bidder upon execution of the agreement. The Contractor's Affidavit and Statement of Surety Company shall be submitted by the contractor with the request for final payment.

Termination of Contract

It shall be the sole right of the City to terminate any contract upon written thirty (30) day notification to the contractor.

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 Colonial Heights, VA 23834-9001
 Larry H. Melvin, Purchasing Agent
 (804) 520-9333 Fax (804) 524-8723
MelvinL@colonialheightava.gov

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Nondiscrimination Clause

In accordance with Section 2.2-4311 of the *Code of Virginia*, every contract for goods or services over \$10,000 shall include the following provisions:

1. The contractor will not discriminate against any employee or applicant for employment because of disability, race, religion, sex or national origin except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
2. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
3. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

The contractor shall include the provisions of the foregoing paragraphs, 1, 2 and 3 in every subcontract or purchase order over \$10,000 so that the provision will be binding upon each subcontractor or vendor.

Drug Free Workplace

In accordance with Section 2.2-4312 of the Code of Virginia, during the performance of this contract, the contractor agrees to:

1. Provide a drug-free workplace for the contractor's employees
2. Post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition.
3. State in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace
4. Include the provisions of the foregoing clauses in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purpose of this section, "drug free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor.

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Faith-Based Organizations

In accordance with Code of Virginia, Section 2.2-4343.1, the City of Colonial Heights does not discriminate against faith-based organization.

Contractor's Insurance

The Contractor shall purchase and maintain in force, at his own expense, such insurance as will protect him and the City from claims which may arise out of or result from the Contractor's execution of the work, whether such execution be by himself, his employees, agents, subcontractors or by anyone for whose acts any of them may be liable. The insurance coverage shall be such as to fully protect the Owner, the Engineer (if applicable) and the general public from any and all claims for injury and damage resulting by any actions on the part of the contractor or his forces as enumerated above. **If awarded the contract, the Contractor shall furnish an original Certificate of Insurance, naming the City of Colonial Heights as an additional insured.** Should any of the policies be canceled before the expiration date, the issuing company will mail 30 days written notice to the certificate holder.

The Contractor shall furnish insurance in satisfactory limits and on forms and of companies that are acceptable to the Owner's Attorney and/or Risk Management and shall require and show evidence of insurance coverage on behalf of any subcontractors (if applicable), before entering into any agreement to sublet any part of the work to be done under this contract. The contractor will provide a minimum of liability insurance as follows:

- Workmen's Compensation – Statutory Limits
- Contractor's liability covering all operations performed by the contractor or any subcontractor with limits of not less than \$1,000,000 combined single limit. Sub contractors are subject to the same limits and must submit certificates of insurance to this office. All certificates of insurance must name the City of Colonial Heights as additionally insured.
- Automobile liability insurance-all owned, non-owned and hired automobiles with same limits as in (b) above.

Certification of above insurance requirements will be required before the issuance of an award. Also required to be submitted with the insurance certificate is the complete address, phone number and contact person for the insurance company. The authorized agent signing on behalf of the insurance company must submit certification that they are a licensed agent to do business for the Company within the State of Virginia.

Certificate holder should be listed as – City of Colonial Heights, c/o Purchasing Department, 201 James Avenue, 2nd floor, P.O. Box 3401, Colonial Heights, VA 23834-9001.

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 Finance/Purchasing Department
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If the Certificate of Insurance Form being furnished is other than the City Form, the certificate of insurance must be modified by striking the words “endeavor to” in the second line and by striking the clause ‘but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives.

Qualification of Bidders

The owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work and the bidder shall furnish to the owner all such information and data for this purpose as the owner may request. The owner reserves the right to reject any bid if evidence submitted by or investigation of such bidder fails to satisfy the owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditionals bids will not be accepted.

Contractor Registration

Contractors must be classified according to section 54.1-1100 of the Code of Virginia:

- “Class A contractors” perform or manage construction, removal, repair or improvement projects when (i) the total value referred to in a single contractor or project is \$120,000 or more, or (ii) the total value of all such construction, removal, repair, or improvements undertaken by such person within any 12 month period is \$750,000 or more
- “Class B contractors” perform or manage construction, removal, repair, or improvements when (i) the total value referred to in a single contract or project is \$7,500 or more, but less than \$120,000, or (ii) the total value of all such construction, removal, repair or improvements undertaken by such person within any 12 month period is \$150,000 or more, but less than \$750,000.
- “Class C contractors” perform or manage construction, removal, repair, or improvements when (i) the total value referred to in a single contract or project is over \$1,000 but less than \$7,500, or (ii) the total value of all such construction, removal, repair, or improvements undertaken by such person within any 12 month period is less than \$150,000.

The bidder shall place on the outside of the envelope containing the bid and shall place in the bid over his signature, the contractor’s class and license number.

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Proposal

Furnish all material, labor, equipment, fees and insurance coverage for the
 Violet Bank Museum Rehabilitation, Phase I, located at 303 Virginia
 Avenue, Colonial Heights VA

\$ _____
 Lump Sum

All work to be accomplished as outlined in this sealed bid, specifications and drawings.

Please return you bid in a sealed envelope.

Please mark on the outside of your bid:

Invitation for Bid: 20-102302-1113

Violet Bank Museum Rehabilitation Project – Phase I

Closing Date/Time: October 23 2020. 2:00 PM EDT

Bids should be sent to:

City of Colonial Heights VA
 Finance/Purchasing Department
 201 James Avenue -2nd Floor
 P.O. Box 3401 (Mail Address)
 Colonial Heights VA 23834
 Larry H Melvin – Purchasing Agent

City of Colonial Heights
 Finance/Purchasing Department
 201 James Avenue 2nd Floor – P.O. Box 3401
 Colonial Heights, VA 23834-9001
 Larry H. Melvin, Purchasing Agent
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MelvinL@colonialheightsva.gov.

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If Signature is other than the President, please furnish this office a letter of explanation for authority to sign for the President.

In compliance with Invitation for Bid 19-121902-1105 and subject to all conditions thereof and attached thereto, the undersigned offers and agrees, if this Bid be accepted within 90 calendar days from the date of opening, to furnish any and all of the items upon which the prices are quoted.

My signature certifies that the accompanying proposal is not the result of or affected by, any unlawful act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under Title 18.2, Chapter 12, Article 1.1 of the Code of Virginia, 1950 as amended. Furthermore, I understand that fraud and unlawful collusion are crimes under the Virginia Governmental Frauds Act, the Virginia Government Bid Rigging Act, and Virginia Antitrust Act and Federal Law and can result in fines, prison sentences and civil damage awards.

My signature also certifies that this firm has no business or personal relationships with any other companies or personal that could be considered as a conflict of interest to the City of Colonial Heights, and that there are no principals, officers, agents, employees, or representatives of this firm that have any business or personal relationship with any other companies or persons that could be considered as a conflict of interest or a potential conflict of interest to the City of Colonial Heights, pertaining to any and all work or services to be performed as a result of this request and any resulting contract with the City of Colonial Heights.

I herby certify that I am authorized to sign as a Representative for the Firm.

Name of Contractor _____

Bidder's Name _____ Title _____

Address _____

Office number (_____) _____ Cell Number (_____) _____ Date _____

Contractor's Classification _____ Contractor's Number _____

Bid Bond

KNOW ALL MEN BY THE PESENTS:

That we _____

(hereinafter called "Principal") , as Principal and _____

a corporate duly organized under the laws of the State of _____

(hereinafter called "Surety"), as Surety are held and firmly bound unto the City of Colonial Heights, Virginia

(hereinafter called "Oblige") as obligee, in the sum of _____

(\$ _____) for the payment of which sum well and truly to be made, the said Principal and the said Surety,

bind ourselves, our heirs, executors, administrators, successors and assigns , jointly and severally firmly by these presents.

Now, therefore, if the obligee shall accept the bid of the Principal and the Principal shall enter into a contract with the terms of such bid and give such bond or bonds as may be specified in the bidding or contract documents with goods and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and materials furnished in the prosecution thereof, or in the event of the failure of the principal to enter into such contract and give such bond or bonds, if the Principal shall pay to the Oblige the difference not exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Oblige may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and seal this _____ day of _____, 20 _____

Attest:

Principal (Seal)

Attest:

By _____
Title

Surety (Seal)

Surety Countersigned:

By _____

BY _____
Attorney-in Fact

NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____

City of _____

County of _____

_____ being first duly sworn, deposes and says that

- (1) He is _____
(owner, partner, officer, representative or agent)
- (2) He is fully informed respecting the preparation and contents of the attached bid and all pertinent circumstances respecting such Bid.
- (3) Such Bid is genuine and is not a collusive or sham Bid:
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspire, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or Sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such contract or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Colonial Heights or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the attached Bid are fair and proper are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Name)

(Title)

Subscribe and sworn to before me this _____ day of _____, 20____

(Title)

My commission expires _____

Hold Harmless Agreement

I (we) _____ agree to the following provision relating to
Indemnification of the City of Colonial Heights, whereby:

- (a) The Contractor shall indemnify and save harmless the City, its agents and employees from and against all claims, damages, losses to persons or to property and expenses including attorneys' fees alleged to have been caused through the negligent performance of any part of the work herein, whether such default be asserted to have been in the performance of any part of the work herein, whether such default be asserted to have been in the performance of a duty of employees, to the owners of property or to members of the public. Contractor shall be responsible to City for the acts and omissions of all person, firms or corporations directly or indirectly employed by contractor in connection with the work.
- (b) In any and all claims against the City or any of their agents or employees by any employee of the Contractor or anyone directly or indirectly employed by them may be liable, the indemnification obligation under paragraph (a) shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor under workmen's compensation act, disability benefit acts or other employee benefit acts. Insurance coverage specified in any part of this contract constitutes the minimum requirements and said requirements shall in no way lessen or limit the liability of contractor under the terms of the contract.

Contractor: _____

By: _____

STATE OF _____ of _____

To WIT: I _____ a Notary Public in and for the _____

_____ Aforesaid in the State aforesaid, do certify that _____

_____ Whose name is signed to the above agreement bearing the date of _____

_____ Day of _____ 20 _____, personally appeared before me in my

_____ And State aforesaid and acknowledged the same as his / her act and deed.

My commission expires the _____ day of _____ 20 _____

Given under my hand this _____ day of _____ 20 _____

City of Colonial Heights – Colonial Heights Virginia

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That we _____ and _____
 _____ are held and firmly bound unto the City of Colonial Heights and to the persons
 performing labor and furnishing materials in the just and full sum of _____ Dollars; to the payment whereof, well and
 truly made to the said City we bind ourselves and each of us jointly and severally, firmly by these presents. Sealed with the seals of
 the parties hereto and dated this _____ day of _____ in the year A.D., 20 _____.

The condition of the above obligation is such that whereas the above bound _____
 _____ did, on the _____ day of _____, 20 _____
 enter into a contract with the City of colonial Heights for _____ which contract is by
 reference thereto hereby expressly made a part of this bond..

Now if the said _____ shall well and faithfully perform said contract, and each and every
 condition, stipulation and requirement thereof, without default, and shall indemnify and save harmless the City of Colonial Heights
 from any and all claims against the City under the Virginia Workman's compensation Act, arising out of the performance of said
 contract or any work done in connection therewith, and from any and all damages, either directly or indirectly arising out of any
 failure to perform the same, and shall pay all cost for labor, equipment, vehicles, tools, appliances and materials any and all patent
 fees, and from any and all damages occasioned any party or parties, in person or property, by the negligent doing of the work provide
 for by said contract, or negligent failure to perform the conditions and requirements thereof, then the above obligation is to be void;
 otherwise the same shall remain in full force and virtue.

The same (Bonding Co.) _____ for value received, hereby stipulates and agrees
 that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed there under or the
 specifications accompanying the same shall in anywise affect its obligations of this bond, and it does hereby waive notice of any such
 change, extension of time, alteration or addition to the terms of the contract or to the work to be performed there under or the
 specifications accompanying the same. (N.B. – Where a firm gives bond, all members of the firm should sign individually.)

IF A CORPORATION

_____	_____ (Affix Corporate Seal)
President	
_____	_____
Attest – Secretary	Attorney-in Fact

OTHER THAN A CORPORATION

_____	Countersigned
_____	_____
	Resident Agent

Approved as to Form _____
 City Attorney

Bond – Continued (Acknowledgment – Corporate Principal)

State of _____ of _____

To wit: I _____ a Notary Public in and for the _____

_____ aforesaid in the State aforesaid do certify that _____

and _____ whose names as _____

and _____ respectively, of _____

are signed to the foregoing bond bearing date the _____ day of _____, 20_____

personally appeared before me in my _____ and State aforesaid and acknowledged the same

in behalf of the said corporation, as its act and deed.

My commission expires the _____ day of _____, 20_____.

Given under my hand this _____ day of _____, 20_____

Notary Public**(Affidavit and Acknowledgment of Surety)**

State of _____ of _____ To wit:

I _____ a Notary Public in and for the _____ and State aforesaid,

Do certify that _____ whose name is signed to the foregoing bond bearing date this

_____ day of _____, 20_____, personally appeared before me in my

_____ and State aforesaid and made oath that he is _____ of

_____ ; that he is duly authorized to execute the foregoing bond by virtue of

a certain power of attorney of the said company dated the _____ day of _____, 20_____,

and recorded in the Office of the Clerk of the _____ Court of _____

of Virginia, in Deed book _____ page _____ ; that the said Power of Attorney has not

been revoked; and that the said company has complied with all the requirements of law regulating such companies in the transaction
of business in the State of Virginia. And the said _____ thereupon, the in name and on behalf of the said

company, acknowledged the foregoing bond as its act and deed.

My commission expires the _____ day of _____, 20_____.

Given under my hand this _____ day of _____, 20_____.

Approves as to form _____

City Attorney

Notary Public

CONTRACTOR'S AFFIDAVIT

PROJECT:
(NAME, ADDRESS)

STATE OF

COUNTY/CITY OF

Before me _____, a Notary Public in an for said County/City

Personally appeared _____

(name of duly authorized representative). _____ (Title)

who being duly sworn according to law, deposes and says that all labor, material, and outstanding claims and I

indebtedness of whatever nature arising out of the performance of the contract between the CITY OF

COLONIAL HEIGHTS, VIRGINIA and _____

(Contractor) have been paid in full.

CONTRACTOR:

Address:

Signature

Subscribed and sworn to before me this _____ day of _____, _____

Notary Public _____

My commission Expires _____

STATEMENT OF SURETY COMPANY

PROJECT:
(name, address)

Bond NO:

Contract Amount: \$

Contract Date:

In accordance with the provisions of the Contract between the CITY OF COLONIAL HEIGHTS, VIRGINIA, Owner, and _____ (Contractor), the

(insert name and address of Surety Company), surety on the bond of said contractor, certifies that after a careful examination of the books and records of said Contractor, or after receipt of an affidavit from said Contractor, which examination or affidavit satisfies this company that all claims for labor and materials have been satisfactorily settled, hereby approves of the final payment to said Contractor, and by these presents witnesseth the payment to said Contractor of the final estimates shall not relieve the Surety Company of its obligations to the CITY OF COLONIAL HEIGHTS, as set forth in the said Surety Company's Bond.

IN WITNESS WHEREOF, the said Surety Company has hereunto set its hand and seal this

_____ day of _____, 20_____.

Surety Company

Attest:

(Seal): _____
Signature of Authorized Representative

Title

Note: This statement, if executed by any person other than the President or Vice President of the Company, must be accompanied by a certificate of even date showing authority conferred upon the person so signing to execute such instruments on behalf of the Company represented.

**CITY OF COLONIAL HEIGHTS
STANDARD CONTRACT FOR SERVICES**

This Contract is entered into this _____ day of _____, 20____, by and between the City Council of Colonial Heights, Virginia, or its authorized agents, and the Contractor identified below, for services identified herein, on the following terms and conditions.

1. Definitions.

(a) As used in this Contract, the term “City” shall mean the City Council of Colonial Heights, Virginia, or the using department identified below and authorized by the Purchasing Regulations or other law to enter contracts.

(b) As used in this Contract, the term “Contractor” shall mean:

2. Provision of Services.

(a) The Contractor hereby agrees to provide the following services to the City:

(b) The time, manner and place for performance of such services shall be:

3. Time and Essence.

Time shall be of the essence in this Contract, except where it is herein specifically provided to the contrary.

4. City Obligations.

(a) In return for the services identified above, the City shall pay the Contractor the following amount:

(b) In addition to any provision of Paragraph 5 hereof, the Contractor agrees to grant the City a two percent (2%) discount for all invoices, provided that the City pays any invoice or other billing within ten (10) working days of receipt thereof.

5. **Termination for Convenience of the City.**

(a) The parties agree that the City may terminate this Contract, or any work or delivery required hereunder, from time to time either in whole or in part, whenever the City Manager or the Purchasing Agent of Colonial Heights determines that such termination is in the best interest of the City.

(b) Termination, in whole or in part, shall be effected by delivery of a Notice of Termination signed by the City Manager or the Purchasing Agent, mailed or delivered to the Contractor and specifically setting forth the effective date of termination.

(c) Upon receipt of such Notice, the Contractor shall:

(i) cease any further deliveries or work due under this Contract, on the date, and to the extent, which may be specified in the Notice;

(ii) place no further orders with any subcontractors except as may be necessary to perform that portion of this Contract not subject to the Notice;

(iii) terminate all subcontracts except those made with respect to contract performance not subject to the Notice;

(iv) settle all outstanding liabilities and claims which may arise out of such termination, with the ratification of the City Purchasing Agent; and

(v) use its best efforts to mitigate any damages which may be sustained by him as a consequence of termination under this clause.

(d) After complying with the provisions of subparagraph (c), above, the Contractor shall submit a termination claim, in no event later than six months after the effective date of their termination, unless one or more extensions of three months each are granted by the Purchasing Agent.

(e) The Purchasing Agent, with the approval of the City's signatory to this Contract, shall pay from the using department's budget reasonable costs of termination, including a reasonable amount for profit on supplies or services delivered or completed. In no event shall this amount be greater than the original contract price, reduced by any payments made prior to Notice of Termination, and further reduced by the price of the supplies not delivered, or the service not provided. This Contract shall be amended accordingly, and the Contractor shall be paid the agreed amount.

(f) In the event that the parties cannot agree on the whole amount to be paid to the Contractor by reason of termination under this clause, the Purchasing Agent shall pay to the Contractor the amounts determined as follows, without duplicating any amounts which may have already been paid under the preceding paragraph of this clause:

(i) with respect to all Contract performance prior to the effective date of Notice of Termination, the total of:

(A) cost of work performed or supplies delivered;

(B) the cost of settling and paying any reasonable claims as provided in paragraph 6

(c) (iv), above;

(C) a sum as profit on (A) determined by the Purchasing Agent to be fair and reasonable.

(ii) the total sum to be paid under (i) above shall not exceed the contract price, as reduced by the amount of payments otherwise made, and as further reduced by the contract price of work or supplies not terminated.

(g) In the event that the Contractor is not satisfied with any payments which the Purchasing Agent shall determine to be due under this clause, the Contractor may appeal any claim to the City Council in accordance with Paragraph 15 of this contract concerning Disputes.

(h) The Contractor shall include similar provisions in any subcontract, and shall specifically include a requirement that subcontractors make all reasonable efforts to mitigate damages which may be suffered. Failure to include such provision shall bar the Contractor from any recovery from the City whatsoever of loss or damage sustained by a subcontractor as a consequence of termination for convenience.

6. Termination for Default

Either party may terminate this Contract, without further obligation, for the default of the other party or its agents or employees with respect to any agreement or provision contained herein.

7. Examination of Records.

(a) The Contractor agrees that the City, or any duly authorized representative, shall, until the expiration of three (3) years after final payment hereunder, have access to and the right to examine and copy any directly pertinent books, documents, papers and records of the Contractor involving transactions related to this Contract.

(b) The Contractor further agrees to include in any subcontract for more than \$10,000 entered into as a result of this Contract, a provision to the effect that the subcontractor agrees that the City or any duly authorized representative shall, until the expiration of three (3) years after final payment under the subcontract, have access to and the right to examine and copy any pertinent books, documents, papers and records of such Contractor involved in transactions related to such subcontract, or this Contract. The term subcontract as used herein shall exclude subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

(c) The period of access provided in subparagraphs (a) and (b) above for records, books, documents and papers which may relate to any arbitration, litigation, or the settlement of claims arising out of the performance of this contract or any subcontract shall continue until any appeals, arbitration, litigation, or claims shall have been finally disposed of.

8. Termination for Non-Appropriation of Funds.

(a) If funds are not appropriated for any succeeding fiscal year subsequent to the one in which this Contract is entered into, for the purposes of this Contract, then the City may terminate this Contract upon thirty (30) days prior written notice to the Contractor. Should termination be accomplished in accordance with this Section, the City shall be liable only for payments due through the date of termination.

(b) The City agrees that should it terminate in accordance with this Section, it shall not obtain services which are substantially equal to or similar to those for which this Contract was entered into. This provision shall survive any termination of the Contract.

9. **Insurance.**

The Contractor shall maintain insurance, in an amount and a form set forth herein, to insure against the risks which are identified herein. The insurance required hereby shall be: **pursuant to attached certificate of insurance**. The Contractor shall provide a Certificate of Insurance, naming the City as additionally insured.

10. **Assignability of Contract.**

Neither this Contract, nor any part hereof, may be assigned by the Contractor to any other party without the express written permission of the City Manager.

11. **Modifications or Changes to this Contract.**

(a) Change Orders. The Purchasing Agent, with the concurrence of the City's signatory to this Contract, shall without notice to any sureties, have the authority to order changes in this Contract which affect the cost or time of performance. Such changes shall be ordered in writing specifically as a change order. Such orders shall be limited to reasonable changes in the services to be performed or the time of performance; provided that no Contractor shall be excused from performance under the then changed Contract by failure to agree to such changes, and it is the express purpose of this provision to permit unilateral changes in the Contract subject to the conditions and limitations herein.

(b) The Contractor need not perform any work described in any change order unless it has received a certification from the City that there are funds budgeted and appropriated sufficient to cover the cost of such changes.

(c) The Contractor shall make a demand for payment for changed work within thirty (30) days of receipt of a change order, unless such time period is extended in writing, or unless the Purchasing Agent required submission of a cost proposal prior to the initiation of any changed work or supplies. Later notification shall not bar the honoring of such claim or demand unless the City is prejudiced by such delay.

(d) No claim for changes ordered hereunder shall be considered if made after final payment in accordance with the Contract.

12. **Warranties:**

13. **Additional Bond Security.**

If any surety upon any bond furnished in connection with this Contract becomes unacceptable to the City, the Contractor shall promptly furnish such additional security as may be required from time to time to protect the interest of the City and a person supplying labor and materials in the prosecution of work contemplated by this Contract.

14. **Disputes.**

Contractual claims, whether for money or other relief, shall be submitted in writing no later than 60 days after final payment to the Contractor. However, written notice of the Contractor's intention to file a claim shall be given at the time of the occurrence or the beginning of the work upon which the claim will be based. Contractual claims shall be addressed to the Purchasing Agent and shall clearly designate the correspondence as a contractual claim, the contract to which it is referring, and the basis for the claim. The City Manager or his designee shall respond in writing to the Contractor with his final decision within 90 days of the claim's submission. The written decision of the City Manager or his designee shall be final and conclusive unless the Contractor appeals within six months of the date of the decision by instituting legal action as specified in §2.2-4364 of the Code of Virginia.

15. Nondiscrimination.

During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

(b) Contractor shall state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor is an equal opportunity employer.

(c) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient compliance with this provision. Contractor shall include the provisions of the foregoing subparagraphs (a), (b), and (c) in every subcontract or purchase order of over \$10,000 so that the provisions will be binding upon each subcontractor or vendor.

16. Drug Free Workplace.

During the performance of this contract, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession or use of a controlled substance or marijuana is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the above clauses in every contract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor. "Drug-free workplace" means a site for the performance of work done in connection with this contract and at which employees are subject to the prohibitions in (ii) above.

17. Interest.

Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent per month on all amounts the City owes to the Contractor.

18. Payments to Subcontractors.

The Contractor agrees to take one of the following actions within seven days after receipt of payment from the City for work performed by a subcontractor under the Contract:

- a. Pay the subcontractor the proportionate share of the total payment received from the City attributable to the work performed by the subcontractor under the Contract; or
- b. Notify the City and the subcontractor, in writing, of his intention to withhold all or a part of the payment with the reasons for nonpayment.
- c. The Contractor agrees to pay interest to the subcontractor on all amounts owed by the Contractor that remain unpaid after seven days following receipt by the Contractor of payment from the City for work performed by the subcontractor under the Contract, except for amounts withheld under subsection 1(b).
- d. The Contractor agrees to include language in its subcontracts and with lower-tier subcontractors which states that unless otherwise provided under the terms of the Contract, interest shall accrue at the rate of one percent per month.

19. Social Security or Employer Identification Number.

Prior to any payment being made by the City under the Contract, the Contractor shall provide the City his or her social security number (if an individual) or the federal employer identification number (if a proprietorship, partnership or corporation).

20. Payment and Performance Bonds (Construction Contracts Only).

The City shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract. The Contractor shall provide a Performance Bond and a Payment Bond (AIA Document A312) each for one hundred percent (100%) of the Contract including all adjustments as authorized by change order. Bond premiums for the initial Contract shall be paid by the Contractor. Any subsequent bond premium costs shall be as authorized by change order.

Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

21. Worker's Compensation (Construction Contracts Only).

No Contractor shall perform any work on a construction contract unless he (i) has obtained, and continues to maintain for the duration of the work, worker's compensation coverage required pursuant to Chapter 8 (§65.2-800 et seq.) of Title 65.2 of the Code of Virginia and (ii) provides prior to the award of contract, on a form furnished by the City, evidence of such coverage.

22. Additional Terms and Conditions.

23. Integration Clause.

This Contract shall constitute the whole agreement between the parties. There are no promises, terms, conditions, or obligations other than those contained herein, and this contract shall supersede all previous communications, representations, or agreements, written or verbal, between the parties hereto.

24. Legal Status

All individuals performing work pursuant to this contract must be U.S. citizens or possess documents that allow them to be employed and work in the United States.

25. Faith-Based Provisions.

The City does not discriminate against faith-based organizations. For the purpose of this section, “faith-based organization” means a religious organization that is or applies to be a Contractor to provide goods and services for programs funded by the block grant provided pursuant to the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, P.L. 104-193.

26. City Ownership of Contract Product.

Drawings, specifications and other documents, including those in electronic form, prepared by the Contractor are Instruments of Service. The Contractor shall be deemed the author and owner of the instruments until such time as payment is made therefore, at which time the City shall become the owner of the Instruments of Service. The Owner, upon completion or termination of this Contract, shall have full and exclusive rights to use the Instruments of Service in any manner not inconsistent with state law. The Contractor shall not use the Instruments of Service on any other work or release information about the Instruments of Service without the express written consent of the City.

Contractor or Duly Authorize Representative

Title

Date

City Representative

Title

Date

BIDDER QUALIFICATION FORM FOR RESTORATION WORK

(To be fully completed by Bidder for Exterior Restoration Work and submitted together with Bid Form)

VIOLET BANK MESEUM REHABILATION- PHASE I

VIOLET BANK MESEUM is a significant historic building. Each Bidder must demonstrate, to the satisfaction of the Owner, that their firm and the personnel to be employed in the execution of the work possess requisite experience in comparable work on other buildings listed on the National Register of Historic Places.

The submission of this signed and notarized form is a requirement of the Bidding Documents. All items must be answered, and the data given must be clear and comprehensive. Failure to answer these questions in a complete manner will result in rejection of the bid. The Owner reserves the right to reject any bidder who, in the judgement of the Owner and based on a review of the Qualification Forms, is not qualified to perform the work of the Contract as specified. The Owner's decisions regarding rejection of the bids based on bidder's qualifications shall be final. Each contractor must use all contractors and craftsmen listed on this Form unless specific permission has been granted by the Owner to substitute personnel. Failure to use those contractors and craftsmen listed on this Form will be in breach of contract.

All the following questions must be answered. Questions No. 1 through 4 refer specifically to the General Contractor's firm and shall be used to determine ability of General Contractor to manage and perform the quality of work required under this Contract. Questions 5 through 10 refer to the Restoration Specialist that will be performing the indicated work, should your firm be awarded the Contract. Data given must be clear and comprehensive. If needed, answers may be on separate attached sheets. Photographic data may be furnished on jobs listed.

1. How many years has your organization been in business under its present name?

2. How many years under previous business names (if any)? _____

List previous names: _____

3. List all projects on which historic preservation/restoration/renovation work of a similar size, scope, and nature to Work of this Contract was performed within the past five (5) years on buildings listed on the National Register of Historic Places. A minimum of two (2) projects successfully completed in the past five (5) years is required to be acceptable. A contractor need not have performed all of the above types of construction on a single project. Provide a brief description of each of the listed projects.

Project Name & Address	Year	Cost	Owner (Tel.#)	Architect (Tel.#)
------------------------	------	------	---------------	-------------------

1. _____

2. _____

3. _____

4. _____

Provide the names of proposed supervisors and foremen to be employed on this job. Indicate on which job, of the ones listed above, they have worked. On separate sheet, give brief resume of each describing their specific qualifications and past experience in supervising, directing and executing work comparable to that required in this project.

Name	Number of years assoc. with firm	Jobs on which they have worked (selected from above)
------	-------------------------------------	---

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

4. Will you subcontract any part of the work? _____

If so, list subcontractors and their trade:

1. _____
2. _____
3. _____
4. _____
5. _____

5. List at least three (3) jobs involving comparable BRICK MASONRY & STUCCO RESTORATION WORK that your firm (or subcontractor) has executed in the past five (5) years on buildings listed on the National Register of Historic Places.

Project Name & Address	Year	Cost	Owner (Tel.#)	Architect (Tel.#)
------------------------	------	------	---------------	-------------------

1. _____
2. _____
3. _____
4. _____

6. Provide the names of skilled journeymen personnel to be employed on this job for BRICK MASONRY & STUCCO RESTORATION WORK. Indicate on which job, of the ones listed above, they have worked. On separate sheet, give brief resume of each describing their specific qualifications and past experience in performing brick masonry work comparable to that required in this work.

Name	Number of years assoc. with firm	Jobs on which they have worked (selected from above)
------	-------------------------------------	---

1. _____
2. _____
3. _____

4. _____
5. _____
6. _____

7. List at least three (3) jobs involving comparable WOOD SHINGLE ROOFING RESTORATION WORK that your firm (or subcontractor) has executed in the past five (5) years on buildings listed on the National Register of Historic Places.

Project Name & Address	Year	Cost	Owner (Tel.#)	Architect (Tel.#)
------------------------	------	------	---------------	-------------------

1. _____
2. _____
3. _____
4. _____

8. Provide the names of skilled journeymen personnel to be employed on this job for WOOD SHINGLE ROOF RESTORATION WORK. Indicate on which job, of the ones listed above, they have worked. On separate sheet, give brief resume of each describing their specific qualifications and past experience in performing sheet metal work comparable to that required in this work.

Name	Number of years assoc. with firm	Jobs on which they have worked (selected from above)
------	-------------------------------------	---

1. _____
2. _____
3. _____
4. _____
5. _____

Submitted by:

_____	Seal: (If firm is a corporation)
Legal name of firm (please type)	

Address (please type)

Name and title of signer (please type)

_____	_____	_____
Signature	Date	

_____	_____	_____
Notary Public	Date	

**VIOLET BANK
MUSEUM REHABILITATION – PHASE I**

SECTION 011000 – SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Work covered by the Contract Documents.
 - 2. Type of the Contract.
 - 3. Products ordered in advance.
 - 4. Use of premises.
 - 5. Owner's occupancy requirements.
 - 6. Work restrictions.
 - 7. Specification formats and conventions.
- B. Related Sections include the following:
 - 1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Violet Bank Museum Rehabilitation – Phase I
 - 1. Project Location: 303 Virginia Avenue, Colonial Heights, Virginia.
- B. Owner: City of Colonial Heights
 - 1. Owner's Representative: Craig Skalak, Director of Recreations and Parks, City of Colonial Heights
- C. Architect: Mesick Cohen Wilson Baker Architects, LLP, 388 Broadway, Albany, NY 12207
 - 1. Partner-in-Charge: M. Jeffrey Baker
- D. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. Site work associated with the installation of new building perimeter surface and subsurface drainage system. The installation of a perimeter roof gutter system and downspouts that connect to the subsurface drainage system. Masonry chimney work including stucco repair and repointing along with the removal and installation of new flashings. South porch flashing installation and roof repair.

1.4 TYPE OF CONTRACT

- A. Project will be constructed under a single prime contract.

**VIOLET BANK
MUSEUM REHABILITATION – PHASE I**

1. The Work shall be conducted in a single phase.
2. Final completion of the project shall be no later than May 1, 2021

1.5 PRODUCTS ORDERED IN ADVANCE

- A. General: Under direction of the Contractor, the Owner will negotiate Purchase Orders with suppliers of all materials to be incorporated into the Work. Owner will assign these Purchase Orders to Contractor. Costs for receiving, handling, storage if required, and installation of material and equipment shall be included in the Contract Sum.
 1. Contractor's responsibilities are same as if Contractor had negotiated Purchase Orders, including responsibility to renegotiate purchase and to execute final Purchase-Order agreements.

1.6 CONTRACTOR'S USE OF PREMISES

- A. Restricted Use of Site: Contractor shall Limit use of premises to areas within the Contract limits as indicated on Drawings by the Contract limits, and as indicated by requirements of this section.
 1. Confine construction operations to minimize disruption of campus activities and operations during the course of the work.
 2. Limit site disturbance to a maximum of 20 feet beyond building perimeter; 10 feet beyond surface walkways, surface parking, and utilities less than 12 inches in diameter; 15 feet beyond primary roadway curbs and main utility branch trenches; and 25 feet beyond constructed areas with permeable surfaces (such as pervious paving areas, storm water detention facilities, and playing fields) that require additional staging areas in order to limit compaction in the constructed area.
 3. Driveways and Entrances: Keep driveways, loading areas and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.7 OWNER'S OCCUPANCY REQUIREMENTS

- A. Partial Owner Occupancy: Owner will occupy the premises immediately adjacent to the building site during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.
 1. Maintain access to existing walkways and other adjacent occupied or used facilities. Do not close or obstruct walkways or other occupied or used facilities without written permission from Owner.
 2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

**VIOLET BANK
MUSEUM REHABILITATION – PHASE I**

1.8 WORK RESTRICTIONS

- A. On-Site Work Hours: Work shall be generally performed during normal business working hours of 7 a.m. to 6 p.m., Monday through Friday, unless otherwise approved by Owner.
- B. Existing Utility Interruptions: Do not interrupt utilities serving project site and adjacent existing facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two (2) days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Owner's written permission.
- C. Nonsmoking Campus: Smoking is not permitted on the Florida Southern College grounds.

1.9 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 50-division format and CSI/CSC's "MasterFormat" numbering system.
 - 1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
 - 2. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

**VIOLET BANK
MUSEUM REHABILITATION – PHASE I**

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections include the following:
 - 1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 7 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.

**VIOLET BANK
MUSEUM REHABILITATION – PHASE I**

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive which instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

**VIOLET BANK
MUSEUM REHABILITATION – PHASE I**

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
 - 1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals Schedule.
 - c. Contractor's Construction Schedule.
 - 2. Submit the Schedule of Values to Architect at earliest possible date but no later than 7 days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.

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2. Arrange the Schedule of Values in tabular form with separate columns.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
6. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours.
 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 1. List of subcontractors.
 2. Schedule of Values.
 3. Contractor's Construction Schedule (preliminary if not final).
 4. Products list.
 5. Schedule of unit prices.

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6. Submittals Schedule.
 7. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work such as building permits.
 8. Report of preconstruction conference.
 9. Certificates of insurance and insurance policies.
- G. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- H. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Updated final statement, accounting for final changes to the Contract Sum.
 3. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 4. AIA Document G706A, "Contractor's Affidavit of Release of Liens" for the General Contractor, all Subcontractors and all major material suppliers.
 5. Evidence that claims have been settled.
 6. Consent of Surety if Performance and Payment Bonds are required for the Project.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

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SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on the Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Administrative and supervisory personnel.
 - 3. Project meetings.
 - 4. Requests for Interpretation (RFIs).
 - 5. Job Mock-ups.
- B. Related Sections include the following:
 - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
 - 2. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
 - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including electrical and site improvements.

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- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors when coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of mechanical and electrical systems.
 - 9. Project closeout activities.

1.5 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 - 3. Minutes: Architect shall prepare and distribute meeting minutes. Such minutes shall be used for determining the agenda for the following job meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 - 1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing and long-lead items.
 - c. Designation of key personnel and their duties.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for RFIs.
 - f. Procedures for testing and inspecting.
 - g. Procedures for processing Applications for Payment.
 - h. Distribution of the Contract Documents.
 - i. Submittal procedures.

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- j. Preparation of Record Documents.
 - k. Use of the premises.
 - l. Work restrictions.
 - m. Owner's occupancy requirements.
 - n. Responsibility for temporary facilities and controls.
 - o. Construction waste management and recycling.
 - p. Parking availability.
 - q. Office, work, and storage areas.
 - r. Equipment deliveries and priorities.
 - s. First aid.
 - t. Security.
 - u. Progress cleaning.
 - v. Working hours.
3. Minutes: Architect will record and distribute meeting minutes.
- C. Progress (Job) Meetings: Conduct progress meetings at bi-weekly intervals and/or as required by the demands of the Work. Coordinate dates of meetings with preparation of payment requests.
- 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries requiring Owner purchasing.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Status of correction of deficient items.
 - 10) Field observations.
 - 11) RFIs.
 - 12) Status of proposal requests.
 - 13) Pending changes.
 - 14) Status of Change Orders.
 - 15) Pending claims and disputes.
 - 16) Documentation of information for payment requests.
 - 3. Minutes: Architect will record and distribute to Contractor the meeting minutes.

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4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.6 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
 1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Architect.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
- C. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow 10 working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
 1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."

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- a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- D. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within 5 days if Contractor disagrees with response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly. Include the following:
 - 1. Project name.
 - 2. Name and address of Contractor.
 - 3. Name and address of Architect.
 - 4. RFI number including RFIs that were dropped and not submitted.
 - 5. RFI description.
 - 6. Date the RFI was submitted.
 - 7. Date Architect's response was received.
 - 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

1.7 JOB MOCK-UPS

- A. Mockups: Before installing portions of the Work requiring mockups as specified under Quality Control of individual specifications sections, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and size of indicated or, if not indicated, as directed by the Architect
 - 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Architect's approval of mockups before starting work, fabrication or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 6. Demolish and remove mockups when directed, unless in Architect's opinion mockup may be used as part of the finished Work, or as otherwise indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

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SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's Construction Schedule.
 - 2. Subcontractors list.
 - 3. Submittals Schedule.
- B. Related Sections include the following:
 - 1. Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
 - 2. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
 - 3. Division 01 Section "Photographic Documentation"
 - 4. Division 01 Section "Closeout Procedures" for submitting final Project closeout documentation.

1.3 SUBMITTALS

- A. Subcontractor's List: Within 48 hours of the Award of Contract, submit to the Architect for review and approval, a list of all Subcontractors proposed for use on the Project.
 - 1. Approval of Subcontractors: Owner and Architect reserve the right to reject any Subcontractor if they deem the Subcontractor to be unqualified to perform the Work as specified.
 - 2. Use of Subcontractors: Once Subcontractors are approved, the Contractor shall make no substitutions unless any proposed substitution is submitted in writing to the Architect and approval is obtained from the Architect.
- B. Submittals Schedule: Within 7 days of the Award of Contract, Submit 2 copies of schedule. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
- C. Contractor's Construction Schedule: Within 14 days of the Award of Contract, submit three printed copies of initial schedule, large enough to show entire schedule for entire construction

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period. Schedule shall be in the form of a horizontal bar chart clearly indicating activities, time schedule and project milestones.

1. Activity report: List of all activities required for the project separated by different trades known.
2. Time Schedule: Indicate starting date and completion date in bar form with identification of date milestones. Allow for float time to compensate for potential delays in the Work. Indicate dates for Substantial Completion and Final Completion allowing for project closeout procedures specified.

1.4 QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 1, Section "Project Management and Coordination." Review methods and procedures related to Contractor's Construction Schedule.

1.5 COORDINATION

- A. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 1. Secure time commitments for performing critical elements of the Work from parties involved
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals required by individual Sections of the Specifications in the Project Manual, arranged in chronological order by dates required by construction schedule and identified by the applicable Section of the Specifications. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
 1. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.

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2. Procurement Activities: include procurement process activities for long lead items and major items, requiring a cycles of more than 60 days, as separate activities in schedule. Procurement cycles activities include but are not limited to, submittals, approvals, purchasing, fabrication and delivery.
 3. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
- B. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 - C. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
 - D. Extend schedule from date established for commencement of the Work to date of Substantial Completion, and Final Completion, allowing for project clout procedures specified.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: Revise schedule and resubmit to Architect if scheduled project completion is changed by delays or other circumstances.

END OF SECTION 013200

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SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
 - 3. Final Completion construction photographs.
- B. Related Sections include the following:
 - 1. Division 01 Section "Submittal Procedures" for submitting photographic documentation.
 - 2. Division 01 Section "Closeout Procedures" for submitting photographic negatives and digital media as Project Record Documents at Project closeout.

1.3 SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of anticipated vantage points marked for location and direction of each photograph. Include same label information as corresponding set of photographs
- B. Construction Photographs: Submit 1 print of each photographic view within 7 days of taking photographs.
 - 1. Format: 4-by-6-inch smooth-surface matte prints on single-weight commercial-grade photographic paper
 - 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Date photograph was taken if not date stamped by camera.
 - d. Description of vantage point, indicating location and direction.
 - e. Unique sequential identifier.
 - 3. Digital Images: Submit a complete set of digital image electronic files with each submittal of prints as a Project Record Document on CD-ROM. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.

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1.4 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 3.0 megapixels, and at an image resolution of not less than 1024 x 768 pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Film Images:
 - 1. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
 - 2. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times for reference. Identify photographs same as for those submitted to Architect.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in filename for each image.
 - 2. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect.
- D. Preconstruction Photographs: Before commencement of selective removals take color, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.
 - 1. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- E. Periodic Construction Photographs: Take 12 color, digital photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

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- F. Final Completion Construction Photographs: Take 12 color photographs after date of Substantial Completion for submission as Project Record Documents. Use same vantage points as listed in E above.

END OF SECTION 013233

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SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Sections include the following:
 - 1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
 - 2. Division 01 Section "Project Management and Coordination" for submitting Coordination Drawings and for mock-up requirements.
 - 3. Division 01 Section "Construction Progress Documentation" for submitting schedules, photographs and reports, including Contractor's Construction Schedule and the Submittals Schedule.
 - 4. Division 01 Section "Closeout Procedures" for submitting warranties.
 - 5. Divisions 02 through 31 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

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- a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal.
 - 1. Initial Review: Allow 10 working days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow 10 working days for review of each resubmittal.
 - 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 15 working days for initial review of each submittal.
 - 5. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- E. Deviations: Highlight or otherwise specifically identify deviations from the Contract Documents on submittals.
 - 1. The Contractor shall be responsible for replacing or correcting, at no additional cost, all work that may be subsequently rejected by the Architect for non-conformance due to such work containing deviations or omissions from the original requirements of the Contract Documents, and which was not specifically identified in advance by the Contractor on submittals.
- F. Identification: Place a permanent label or title block on each submittal for identification.
 - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 - 2. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect
 - d. Name and address of Subcontractor.
 - e. Name and address of supplier.
 - f. Name of manufacturer.
 - g. Number and title of appropriate Specification Section.
 - h. Drawing number and detail references, as appropriate.
 - i. Other necessary identification.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - 1. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

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- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals without review, received from sources other than Contractor.
 - 1. On transmittal or an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
 - 2. Transmittal Form: Provide locations on the form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:)
 - e. Names of Subcontractor, manufacturer and supplier
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Submittal and transmittal distribution record.
 - i. Remarks.
 - j. Signature of transmitter.
- I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal noting date and content of previous submittal and noting revision. Resubmit submittals until they are marked "no exception taken."
- J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- K. Use for Construction: Use only final submittals with mark indicating "no exception taken" action stamp taken by Architect.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
 - 1. Number of Copies: Submit copies of each submittal, as follows, unless otherwise indicated:
 - a. Submittal: Submit four copies, unless copies are required for operation and maintenance manuals. Submit six copies where copies are required for operation and maintenance manuals. Architect will retain two copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Document.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.

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3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Compliance with specified referenced standards.
 - g. Testing by recognized testing agency.
 - h. Application of testing agency labels and seals.
 - i. Notation of coordination requirements.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Shop work manufacturing instructions.
 - e. Templates and patterns.
 - f. Schedules.
 - g. Design calculations.
 - h. Compliance with specified standards.
 - i. Notation of coordination requirements.
 - j. Notation of dimensions established by field measurement.
 - k. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
 3. Number of Copies: As described in 2.2 – A.1.
- D. Samples: Prepare physical units of materials or products, including the following:
 1. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 2. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 3. Preparation: Mount, display or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.

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4. Submit Samples for review of kind, color, pattern and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
 - a. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
 5. Number of Samples for Initial Selection: Submit one full set of available choices where color, pattern, texture or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 6. Number of Samples for Verification: Submit two sets of Samples. Architect will retain one Sample set; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
 - a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections and other similar characteristics are to be demonstrated.
 7. Disposition: Maintain sets of approved Samples at Project site, available for quality control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
- E. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation" for Construction Manager's action.
- F. Submittals Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- G. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."
- H. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
 2. Certificates and Certifications: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- B. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

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- D. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- E. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- F. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- G. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- H. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- I. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- J. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- K. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- L. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
 - 1. Preparation of substrates.
 - 2. Required substrate tolerances.
 - 3. Sequence of installation or erection.
 - 4. Required installation tolerances.
 - 5. Required adjustments.
 - 6. Recommendations for cleaning and protection.
- M. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
 - 1. Name, address, and telephone number of factory-authorized service representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.
 - 3. Statement that products at Project site comply with requirements.
 - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.

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- 6. Statement whether conditions, products, and installation will affect warranty.
- 7. Other required items indicated in individual Specification Sections.

- N. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

- O. Construction Photographs: Comply with requirements specified in Division 01 Section "Photographic Documentation."

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

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SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Sanitary facilities.
 - 3. Ventilation.
 - 4. Electric power service
 - 5. Lighting.
 - 6. Internet Service
- C. Support Facilities include, but are not limited to, the following:
 - 1. Dewatering facilities and drains.
 - 2. Waste disposal facilities.
 - 3. Lifts and hoists.
 - 4. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Environmental protection.
 - 2. Storm water control.
 - 3. Tree and plan protection.
 - 4. Barricades, warning signs and lights.
 - 5. Temporary enclosures.
 - 6. Fire protection.
 - 7. Security protection.
- E. Related Sections include the following:
 - 1. Division 01 Section "Summary" for limitations on utility interruptions and other work.
 - 2. Division 01 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
 - 3. All other applicable Sections in this specification for temporary heat, ventilation and humidity requirements for products in those Sections.
- F. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

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1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be paid by the Owner and shall not be included in the Contract Sum.
- B. Water Service: Use water from Owner's existing water system without metering and without payment of use charges.
- C. Electric Power Service: Use electric power if needed for the Work from Owner's existing system without metering and without payment of use charges.

1.4 SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

1.6 PROJECT CONDITIONS

- A. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
 - 1. Keep temporary services and facilities clean and neat.
 - 2. Relocate temporary services and facilities as required by progress of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.
- B. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.
- C. Portable Chain-Link Fencing: Minimum 2-inch, 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide concrete bases for supporting posts.
- D. Water: Potable.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

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- B. Common-Use Field Office: Of sufficient size to accommodate needs of construction personnel. Keep office clean and orderly. Furnish and equip offices as needed.

2.3 EQUIPMENT

- A. General: Provide equipment suitable for use intended.
- B. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent and size required by location and class of fire exposure.
- C. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110 to 120V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button and pilot light.
- D. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating and lighting circuits may be nonmetallic sheathed cable.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 - 1. Provide rubber hoses as necessary to serve Project site.
- B. Sanitary Facilities: Provide temporary toilets on site in location as approved by the Owner. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- C. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- D. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on

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completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

- E. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.
 - 1. Connect temporary service to Owner's existing power source, as directed by Owner.
 - 2. Electrical Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
 - a. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 - b. Provide warning signs at power outlets other than 110 to 120V.
- F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 - 2. Install lighting for Project identification sign.
 - 3. Provide cable lines with internet access for the following:
 - a. Provide a computer for dedicated e-mail service for facilitating communication with Architect.
 - 4. Post a list of important telephone numbers on the job site.
 - a. Police and fire departments.
 - b. Ambulance service.
 - c. Contractor's home office.
 - d. Architect's office.
 - e. Engineers' offices.
 - f. Owner's office.
 - g. Principal subcontractors' field and home offices.
 - 5. Provide superintendent with cellular telephone and voicemail for use in making and receiving telephone calls in field office and when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Locate field office, storage enclosures and other temporary construction and support facilities for easy access in locations indicated or as approved by the Owner.
 - 2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas.

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1. Provide dust-control treatment that is non-polluting and non-tracking. Reapply treatment as required to minimize dust.
- C. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- D. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
 2. Before connection and operation of permanent drainage piping system, provide temporary drainage where roofing or similar waterproof deck construction is completed.
- F. Project Identification and Temporary Signs: Provide Project identification as specified by Owner and install other signs as required. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
 1. Provide temporary, directional signs for construction personnel and visitors.
 2. Maintain and touchup signs so they are legible at all times.
- G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.
- H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- C. Storm water Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and sub-grade construction to prevent flooding by runoff of storm water from heavy rains.
- D. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

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1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner with one set of keys.
- E. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- G. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather-tight enclosure for building exterior.
- H. Temporary Partitions/Protection for Adjacent Openings: Provide dustproof partitions to limit dust and dirt migration and to adjacent buildings occupied by Owner from fumes, dust and noise.
- I. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide fire extinguishers, visible and accessible from space being served, with signage mounted above.
 - a. Field Office: Class A stored-pressure water-type extinguishers.
 - b. Other locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NPFA- recommended classes for exposures.
 - c. Locate fire extinguishers where convenient and effective for their intended purpose; provide not less than one extinguisher on each area of construction.
 2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities and other access routes for firefighting.
 4. Prohibit smoking in construction areas.
 5. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 6. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

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- C. Operate Project-identification-sign lighting daily from dusk until 12:00 midnight.
- D. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- E. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil.
 - 3. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 - 4. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 015000

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SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
 - 1. Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.

1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.
- D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

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- E. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

1.4 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - b. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - c. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - d. Samples, where applicable or requested.
 - e. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - f. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - g. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - h. Cost information, including a proposal of change, if any, in the Contract Sum.
 - i. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 14 working days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 14 working days of receipt of request, or 14 working days of receipt of additional information or documentation, whichever is later.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

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1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 - 5. Store products to allow for inspection and measurement of quantity or counting of units.
 - 6. Store materials in a manner that will not endanger Project structure.
 - 7. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 8. Store cementitious products and materials on elevated platforms.
 - 9. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 10. Protect stored products from damage and liquids from freezing.
- C. Storage: Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 - 3. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

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PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
 7. Or Equivalent: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
 3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
 - a. Substitutions may be considered, unless otherwise indicated.
 5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
 6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
 7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
 8. Basis-of-Design Products: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.

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- a. Substitutions may be considered, unless otherwise indicated.
- 9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
- 10. Visual Selection Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches satisfactorily.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern or texture from manufacturer's product line that does not include premium items.

2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - 2. Requested substitution does not require extensive revisions to the Contract Documents.
 - 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - 4. Substitution request is fully documented and properly submitted.
 - 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
 - 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - 7. Requested substitution is compatible with other portions of the Work.
 - 8. Requested substitution has been coordinated with other portions of the Work.
 - 9. Requested substitution provides specified warranty.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

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SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Project Record Documents.
 - 3. Warranties.
 - 4. Final cleaning.
- B. Related Sections include the following:
 - 1. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
 - 2. Division 01 Section "Photographic Documentation" for submitting Final Completion construction photographs and negatives.
 - 3. Divisions 02 through 31 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Advise Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs damage or settlement surveys, property surveys, and similar final record information.
 - 6. Complete startup testing of electrical system.
 - 7. Submit test/adjust/balance records.
 - 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 9. Advise Owner of changeover in heat and other utilities.

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10. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
11. Complete final cleaning requirements, including touchup painting.
12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1.6 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's review.

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- B. Record Drawings: Maintain and submit one set of blue or black line white prints of Contract Drawings and Shop Drawings for locating new underground sewer lines and structures to be provided under the Contract.
 - 1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where shop Drawings are marked, show cross-reference on Contract Drawings.
 - 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 - 3. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
- C. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.7 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

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PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates,
 - f. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use.
 - g. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

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SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. Related Sections include the following:
 - 1. Division 01 Section "Closeout Procedures" for general closeout procedures.
 - 2. Divisions 02 through 31 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of marked-up Record Prints.
 - 2. Number of Copies: Submit copies of Record Drawings as follows:
- B. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one copy of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

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1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Locations of concealed internal utilities.
 - h. Changes made by Change Order or Construction Change Directive.
 - i. Changes made following Architect's written orders.
 - j. Details not on the original Contract Drawings.
 - k. Field records for variable and concealed conditions.
 - l. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.

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4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Specifications and Record Drawings where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 017839

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SECTION 040120 - MASONRY RESTORATION

PART I - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of contract, including general and supplementary conditions and Division 1 specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. Extent of masonry restoration work is indicated in drawings.
- B. Masonry restoration work includes the following:
 - 1. Replacement face brick to match existing.
 - 2. Removing and rebuilding damaged masonry.
 - 3. Repointing mortar joints.
 - 4. Progress cleaning of masonry surfaces.
 - 6. Lime stucco partering over brick.

1.3 QUALITY ASSURANCE

- A. Masonry Specialist: Work shall be performed by a firm with minimum 5 years successful experience in comparable masonry restoration projects and employing skilled personnel in restoration processes and operations indicated.
- B. Field Supervision: Retain an experienced full-time supervisor on the project site at all times when masonry restoration is in progress. A single individual shall be responsible for supervising masonry restoration work throughout the duration of project.
- C. Mortar Sampling and Trial Mix Testing: Prior to beginning Work, sample existing mortar and prepare trial mortar mixes. Allow for a minimum of one month to sample and prepare trial mixes, test mixes for color match, and make necessary revisions.
- D. Field-Constructed Mock-Ups: Prior to beginning masonry restoration, prepare test samples on existing building to further verify selections made under sample submittals and to demonstrate aesthetic effects and qualities of materials and execution. Sample areas to be selected by Architect and will be close to grade to allow observations by Architect and Owner's Representative. Do not proceed further with work of this section until test sample has been approved by Architect and Owner's Representative. Approved test samples will be used as quality standards for remaining work. Use materials indicated for work:
 - 1. Removals: One 3-foot by 3-foot sample area for demonstrating removal techniques using specified tools. Samples shall constitute a standard for acceptance or rejection of completed work.
 - 2. Rebuilding: One 3-foot by 6-foot sample area for demonstrating rebuilding.
 - 3. Repointing: Two separate 3-foot by 3-foot sample areas, one for demonstrating raking out of joints and one for repointing.

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4. Cleaning: Test clean one-half of repointing sample.

- E. Source of Materials: Obtain materials for masonry restoration from single source for each type of material required (face brick, stone, cement, sand, etc.) to ensure match of quality, color, pattern, and texture.

1.4 SUBMITTALS

A. Qualifications:

1. Submit descriptions of projects completed within last ten years of similar scope and cost. Include project location and reference contact information.
2. Submit project experience for field supervisor responsible for work to be performed under this section.

B. Product Data: Submit manufacturer's technical data for each product indicated, including recommendations for its application and installation instructions. Include test reports and certifications substantiating product complies with requirements.

C. Material Test Data: Prior to construction, submit test data for materials indicated to verify compliance with these specifications.

D. Samples: Submit for verification prior to construction:

1. Mortar: For each trial mix, showing color and finish.
2. Brick: For size and color.
3. Pavers: For size and color.

1.5 DELIVERY, STORAGE AND HANDLING

A. Carefully pack, handle, and ship masonry units and accessories strapped together in suitable packs or pallets or heavy cartons. Carefully unload and handle to prevent chipping and breakage.

B. Deliver other materials to site in manufacturer's original, unopened containers and packaging, bearing labels as to types and names of products and manufacturers.

C. Protect masonry materials during storage and construction from wetting by rain, snow, or ground water and from staining or intermixture with earth or other types of materials.

D. Protect grout, mortar, and other materials from deterioration by moisture and temperature. Store in dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage.

1.6 PROJECT CONDITIONS

A. Only clean masonry surfaces when air temperature is 40 degrees F (4 degrees C) or above and will remain so until masonry has dried out. Temperature must remain above 40 degrees F (4 degrees C) for minimum seven days after completing cleaning.

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- B. Unless temporary protection is provided, do not repoint mortar joints, rebuild masonry, or repair masonry unless air temperature is between 40 degrees F (4 degrees C) and 90 degrees F (32 degrees C) and will remain so for at least 48 hours after completion of work.
 - 1. If temperature exceeds 90 degrees F (32 degrees C), comply with Hot-Weather Masonry Construction Requirements in the drawings.
 - 2. If temperature falls below 40 degrees F (4 degrees C), follow Cold-Weather Masonry Construction Requirements in the drawings.
- C. Prevent mortar used in repointing and repair work from staining face of surrounding masonry or other surfaces. Immediately remove grout and mortar in contact with exposed masonry or other surfaces.
- D. Protect sills, ledges, and projections from mortar droppings.

PART 2 - PRODUCTS

2.1 BRICK UNIT MANUFACTURE

- A. Naming of manufacturer's proprietary product is for establishing quality level, performance standard and aesthetic effect only, and is not intended to imply that product named is required to be used to the exclusion of equivalent products of other manufacturers. Products of other manufacturers will be considered subject to compliance with specified requirements. Failure to meet any requirements relating to quality level, performance standard or aesthetic effect, as evaluated by the Architect, shall be sufficient reason for rejection.

Manufacturer: Old Carolina Brick Co., which is located at: 475 Majolica Rd.; Salisbury, NC 28147; Toll Free Tel: 800-536-8850; Tel: 704-636-8850; Fax: 704-636-0000;

- a. Facing Brick: ASTM C 216, Grade SW, Type FBA. Size to match existing brick masonry to be repaired.

2.2 MORTAR MATERIALS

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds or other admixtures, unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
- B. Natural Hydraulic Lime (for brick mortar and lime pargeting): St. Astier's pure lime as distributed by Virginia Limeworks, PO Box 516, Monroe, VA (434) 929-8113. No substitutions permitted. Precise mix to be determined by testing and recommendations of Virginia Limeworks and the Scottish Lime Centre. Costs for mortar analysis shall be included as a part of the scope of work of this contract and shall be borne by the bidder.
- C. Mortar Pigments : Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortar.
- D. Aggregate for Mortar:

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1. Washed aggregate consisting of natural sand, well graded from #6 to #200. Precise sand used in the mix shall be selected upon the recommendations of Virginia Lime-works. The intent of this contract is to match the mortar aggregated used in the original construction.
- E. Water : Potable.
- F. Aggregate for Mortar: ASTM C 144 unless otherwise indicated.
 1. For pointing mortar, provide sand with rounded edges.
 2. Match size, texture, and gradation of aggregate in existing mortar as closely as possible.
- G. Admixtures: Do not use unless proposed, tested, and accepted in Preconstruction Testing Phase prior to beginning work.

2.3 PROGRESS CLEANING MATERIALS AND EQUIPMENT

- A. Water for Cleaning: Clean, potable, free of oils, acids, alkalis, salts, and organic matter.
- B. Brushes: Stiff mylar or fiber bristle only.
- C. Acidic, Alkali, and Detergent Cleaning Agents: Do not use unless proposed, tested, and accepted in Preconstruction Testing Phase prior to beginning work.

2.4 FLASHING MATERIALS

- A. Flexible Flashing at Water Table:
 1. Stainless Steel Fabric Flashing; Laminated:
 - a. Subject to compliance provide one of the following or approved equal:
 - 1) Hohmann and Barnard Mighty Flash SS Stainless Steel Fabric Flashing
 - 2) York Manufacturing Inc Multi Flash SS Stainless Steel Fabric Flashing
 - 3) Prosoco R guard SS Thru Wall Flashing

PART 3 - EXECUTION

3.1 MORTAR MIXES

- A. General:
 1. Measurement and Mixing: Measure cementitious and aggregate material in dry conditions by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in clean mechanical batch mixer.
 2. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate materials together before adding water. Then mix again adding only enough water (about half) to produce a damp, unworkable mix that will retain its form when pressed into a ball. Add remaining water in small portions until desired consistency is reached. Allow to sit for 15 minutes prior to use.
- B. Mortar and Grout Proportions: Mix as follows:

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1. Pointing Mortar: One-part NHL 3.5 and two-parts aggregate.
2. Water reducer (casein) may be added to grout mix if proposed, tested, and accepted in Preconstruction Testing Phase, prior to beginning work.

3.2 REPOINTING EXISTING MASONRY

A. Joint Raking:

1. Cut out old mortar by hand with chisel and mallet unless otherwise indicated.
2. Power-operated rotary hand saws and grinders shall only be permitted to make one cut in center of joint to weaken existing mortar. Remove mortar by chisel.
3. Rake out mortar from joints to depths equal to 2 1/2 times their widths but not less than 1 inch.
4. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar.
5. Do not spall edges of masonry units or widen joints. Replace damaged masonry units.
6. When cutting-out is completed in each area, brush joints clean of dirt and debris and blow clean with medium-pressure compressed air.

B. Joint Pointing:

1. Rinse masonry joint surfaces with water to remove dust-mortar particles. Time application of rinsing so that at time of pointing, excess water has evaporated or runoff and joint surfaces are damp but free of standing water.
2. Apply first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 1 inch until a uniform depth is formed. Compact each layer thoroughly. Allow to become thumbprint-hard before applying next layer.
4. After joints have been filled to uniform depth, place remaining pointing mortar in one operation using three layers with first and second layers each filling approximately two-fifths of joint depth and third layer the remaining one-fifth. Fully compact each layer and allow to become thumbprint-hard before applying next layer.
5. When mortar is thumbprint-hard, tool joint to match original appearance of joints unless otherwise indicated. Remove excess mortar from joint edge by brushing.
6. Cure mortar by maintaining in a damp condition for minimum 72 hours.
7. Where repointing work precedes cleaning of existing masonry, allow mortar to harden minimum 30 days before beginning cleaning work.

3.3 MORTAR BEDDING AND JOINTING

A. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
2. Allow cleaned surfaces to dry before setting.
3. Wet joint surfaces thoroughly before applying mortar.
4. Rake out mortar joints for pointing with sealant.

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3.4 PROGRESS CLEANING MASONRY

- A. Each day, clean work surfaces to remove excess mortar and foreign matter on exposed masonry surfaces.
- B. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter using stiff nylon or bristle brushes and clean water sprayed at low pressure.
- C. Do not use metal scrapers or brushes.
- D. Use of acid or alkali cleaning agents shall not be permitted unless proposed, tested, and accepted in Preconstruction Testing Phase prior to beginning cleaning.

END OF SECTION

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SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of contract, including general and supplementary conditions and Division 1 specification sections, apply to this section.

1.2 DESCRIPTION OF WORK

- A. Rough carpentry includes carpentry work not specified as part of other sections and generally not exposed unless otherwise specified.
- B. This section includes the following:
 - 1. Wood grounds, nailers, and blocking.
 - 2. Wood furring.
 - 3. Sheathing.

1.3 QUALITY ASSURANCE

- A. Comply with latest edition of:
 - 1. "Voluntary Product Standard PS 20-05; American Softwood Lumber Standard," U.S. Department of Commerce.
 - 2. "AWPA Book of Standards," American Wood Preservers Association (AWPA).
 - 3. "National Design Specification for Wood Construction," American Forest and Paper Association, Inc.
 - 4. "Voluntary Product Standard PS 1-07; Structural Plywood," U.S. Department of Commerce.
 - 5. "Performance Standards and Policies for Structural-Use Panels, PRP-108," American Plywood Association (APA).
 - 6. *Wood Frame Construction Manual* American Wood Council.

1.4 SPECIAL INSPECTIONS

- A. Refer to Specification Section 014533 and Schedule of Special Inspections.

1.5 SUBMITTALS

- A. General: Submit the following:
 - 1. National Evaluation Reports issued by the National Evaluation Service Committee of the Council of American Building Officials as required to show compliance with this specification.
 - 2. Product data and installation instructions for the following products:
 - a. Metal-framing connectors.
 - b. Structural composite lumber products.

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- c. Construction adhesives.
 - d. Power-driven fasteners.
- 3. Wood treatment data as follows, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated material:
 - a. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
 - b. For water-borne treated products, include statement that moisture content of treated materials was reduced to levels indicated prior to shipment to project site.
 - c. Warranty of chemical treatment manufacturer for each type of treatment.
- 4. Reference Contract Drawing number and addendum number on each submittal.

1.6 PRODUCT HANDLING

- A. Delivery and Storage: Keep materials covered and dry. Protect against exposure to weather and from contact with damp or wet surfaces. Store material in horizontal position on supports above ground. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks and under temporary coverings, including polyethylene and similar materials. For lumber and plywood pressure-treated with water-borne chemicals, use stickers between each course to provide air circulation.
- B. Keep material clearly identified with grade marks legible.
- C. Handle material carefully so it is not damaged.
- D. Repair or replace damaged materials.

1.7 WORKMANSHIP

- A. Contractor shall be responsible for correction of work not conforming to specified requirements. Correct deficient work as directed by Architect.
- B. Remove work found to be defective. Replace with new acceptable work.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

- A. Grade Stamps: Provide lumber with each piece factory-marked with grade stamp of Inspection Agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
- B. Nominal sizes are indicated except as shown by detail dimensions. Provide actual sizes as required by PS 20 for moisture content specified for each use.
 - 1. Provide dressed lumber, S4S, unless otherwise indicated.
 - 2. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness unless otherwise indicated.

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2.2 DIMENSION LUMBER

- A. For studs (2 to 4 inches thick, 4 to 6 inches wide, 10 feet and shorter) provide surfaced dry, stud grade, spruce-pine-fir (SPF), graded under NLGA rules or species and grade acceptable to Engineer with allowable base design values equal to or greater than:

$$\begin{aligned} F_b &= 675 \text{ psi} \\ E &= 1,200,000 \text{ psi} \end{aligned}$$

- B. For structural framing (2 to 4 inches thick, more than 4 inches wide) provide surfaced dry, no. 1/no. 2 or better grade, spruce-pine-fir (SPF), graded under NLGA rules or species and grade acceptable to Engineer with allowable base design values equal to or greater than:

$$\begin{aligned} F_b &= 875 \text{ psi} \\ E &= 1,400,000 \text{ psi} \end{aligned}$$

2.3 CONCEALED PERFORMANCE-RATED CONSTRUCTION PANELS

- A. General: Where construction panels are indicated for the following concealed types of applications, provide APA Performance-Rated Panels complying with requirements designated under each application for grade designation span rating, exposure durability classification, edge detail where applicable, and thickness.
- B. Roof Sheathing: APA Rated Sheathing.
1. Exposure Durability Classification: Exposure 1.
 2. Span Rating: 40/20 (19/32-inch minimum thickness) or as indicated in Drawings.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this section for material. Provide hot-dip galvanized fasteners for hot-dip galvanized framing connectors. Provide hot-dip galvanized fasteners or fasteners with an equivalent coating for pressure-treated and fire-retardant treated framing.
- B. Nails, Wire, Brads, and Staples: FS FF-N-105.
- C. Power-Driven Fasteners: National Evaluation Report NER-272 or FS FF-P-395B.
- D. Wood Screws: ANSI B 18.6.1.
- E. Lag Screws: ANSI B 18.2.1.
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A, with ASTM A 563 hex nuts and flat washers where indicated.
- G. Chemical Adhesive Anchors: See Section 040120.

2.5 WOOD CONSTRUCTION CONNECTORS

- A. General: Provide wood construction connectors indicated in drawings complying with the following:

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1. Allowable Design Loads: Provide products for which manufacturer publishes allowable design loads determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing laboratory.
2. Galvanized Steel Sheet: Steel sheet zinc-coated by hot-dip process on continuous lines prior to fabrication to comply with ASTM A 525 for coating designation G60 and with ASTM A 446, Grade A (structural quality); ASTM A 526 (commercial quality); or ASTM A 527 (lock-forming quality); as standard with manufacturer for type of anchor indicated.
3. Framing Connectors in Contact with Pressure-Treated Wood: Connectors shall be hot-dip galvanized according to ASTM A653 for coating designation G185. Fasteners used with these connectors shall be hot-dip galvanized to comply with ASTM A 153.
4. Where size and quantity of fasteners are not noted in drawings, provide fasteners specified in manufacturer's load tables. Where options for minimum and maximum fastening are shown, provide fasteners associated with maximum load rating unless noted otherwise.

2.6 MISCELLANEOUS MATERIALS

- A. Adhesives for Field-Gluing Panels to Framing: "PL Adhesives and Sealants, PL-400" or accepted equivalent for dry conditions of use. "PL Adhesives and Sealants, PL-500" or accepted equivalent for treated lumber or wet conditions of use.

2.7 PRESERVATIVE WOOD TREATMENT BY PRESSURE PROCESS

- A. General: Where lumber or plywood is indicated as preservative-treated wood or is specified herein to be treated, comply with applicable requirements of AWWPA Standard U1.
- B. Pressure-treatment shall comply with the following use categories:
 1. Use Category UC2 for interior construction not in contact with the ground.
 2. Use Category UC3B for exterior construction not in contact with the ground.
- C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- D. Pressure-treat above-ground items with water-borne preservatives to minimum retention of 0.25 pcf or more as required by the referenced standard. For interior uses, kiln-dry lumber and plywood after treatment to a maximum moisture content of 19 percent and 15 percent, respectively. Treat indicated items and the following:
 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects impairing quality of rough carpentry construction and are too small to use in fabricating rough carpentry with minimum joints or optimum joint arrangement.

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- B. Set rough carpentry to required levels and lines, with members plumb and true to line and cut and fitted.
- C. Fit rough carpentry to other construction. Scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated.
- E. Countersink nail heads.
- F. Use common wire nails unless otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Predrill as required.
- G. Drill holes for bolted connections 1/16 inch larger in diameter than bolt size being used. Provide washers under bolt heads and nuts in contact with wood.
- H. Predrill lead holes for lag screws and wood screws to diameter approximately 60 percent of shank of lag screw.
- I. Insert lag screws and wood screws by turning. Do not drive with hammer.

3.2 WOOD FRAMING, GENERAL

- A. Framing Standard: Comply with AWC *Wood Framing Construction Manual* unless otherwise indicated.
- B. Install framing members of size and spacing indicated.
- C. Anchor and nail as shown and to comply with the following:
 - 1. National Evaluation Report No. NER-272 for pneumatic- or mechanical-driven staples, P-Nails, and allied fasteners.
 - 2. Published requirements of manufacturer of metal-framing anchors.
 - 3. "Fastening Schedule" in Chapter 23 of *Virginia Uniform Building Code*.
- D. Do not splice structural members between supports.

3.3 STUD FRAMING

- A. General: Arrange studs so wide face of stud is perpendicular to direction of wall or partition and narrow face is parallel. Install single bottom plate and double top plates using 2-inch-thick members whose widths equal that of studs. Nail or anchor plates to supporting construction.
- B. Construct corners and intersections with minimum three studs. Install miscellaneous blocking and framing as shown and as required for support of facing materials, fixtures, specialty items, and trim.
- C. Frame openings with multiple studs and headers. Install nailed header members of thickness equal to width of studs. Set headers on edge and support on jack studs.

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3.4 JOIST FRAMING

- A. General: Install joists with crown edge up and support ends of each member with minimum 1 1/2 inch bearing on wood or metal or 3 inches on masonry.
- B. Frame openings with headers and trimmers supported by metal joist hangers. Use double headers and trimmers where span of header exceeds 4 feet.
- C. Do not notch in middle third of joists. Limit notches elsewhere to one-sixth and no longer than one-third the depth of joist. Notches made at supports shall not exceed one-fourth joist depth. Cut notches to minimum 3/4-inch, predrilled hole. Do not overcut. Do not bore holes larger than one-third depth of joist or locate closer than 2 inches from top or bottom. Do not bore holes within 12 inches of notches.
- D. Install solid blocking 2 inches thick by depth of joist at ends of joists unless ends are held in position by hangers, nailing, or bolting to other framing members.
- E. Lap members framing from opposite sides of beams, girders, or partitions minimum 4 inches, or securely tie opposing members together. Install solid blocking 2 inches thick by depth of joist over supports.
- F. Install bridging of type indicated below between joists where nominal depth-to-thickness ratio exceeds 5, at intervals not exceeding 8 feet.
 - 1. Solid wood bridging 2 inches thick by depth of joist, end nailed to joist.
- G. Install double joists at valley and hip intersections of two roof areas. Bevel ends of common joists for flush fit with valley and hip members.

3.5 INSTALLATION OF CONSTRUCTION PANELS

- A. General: Comply with applicable recommendations contained in Form No. E30U, "APA Engineered Wood Construction Guide," for types of construction panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
 - 1. Sheathing: Nail to framing.
 - 2. Butt panel ends and edges to a close but not tight fit (allow 1/32 inch space).
- C. Install with face grain across supports, using panels continuous over two or more spans with end joints between panels staggered. Locate over center of supports.
- D. Nail 6 inches on center along panel ends and 12 inches center to center at intermediate supports using 8d common nails for panels over 1/2 inch but less than 1 inch thick.
- E. Provide support at unsupported long edges of roof sheathing panels with "Plyclips."
- F. Allow 1/8 inch open space between edge joints for expansion and contraction of panels.
- G. Used plywood will not be acceptable material for sheathing purposes.

END OF SECTION 061000

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SECTION 064013 - EXTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Extent of finish carpentry work is as shown, detailed and noted on the drawings and as specified herein.
- B. Finish carpentry includes carpentry work that is exposed to view, is non-structural, and that is not specified as part of other sections. Types of finish carpentry in this section includes the following:
 - 1. Wood siding.
 - 2. Repair / replacement of existing exterior wood cornice trim required for structural repairs.
 - 3. Replacement of existing wood water table.
 - 4. Repair / replacement to existing wood trim not listed but indicated on drawings.
- C. Related Sections include the following:
 - 1. Division 04 Section "Masonry Restoration" for related flashings on water table.
 - 2. Division 07 Section "Joint Sealants" for related sealants in wood joinery.
 - 3. Division 09 Section "Painting" for related painting of woodwork.

1.3 SUBMITTALS

- A. Product Data: For each type of product and process indicated and incorporated into items of exterior architectural woodwork during fabrication, finishing, and installation.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- B. Installer Qualifications: Installation of all work of this Section shall be performed only by journeyman carpenters who are thoroughly trained and experienced in restoration work and the skills required, completely familiar with the methods involved and the manufacturer's methods of installation, and thoroughly familiar with the requirements of this Work. In acceptance of rejection of work, no allowance will be made for lack of skill on part of workers.
- C. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for Premium Grade standard of exterior architectural woodwork indicated for construction, finishes, installation, and other requirements.

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1.5 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation of exterior woodwork only when existing and forecasted weather conditions permit work to be performed and at least one coat of specified finish to be applied without exposure to rain, snow, or dampness.
- B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.6 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, reinforcements, and other related units of Work specified in other Sections to ensure that exterior architectural woodwork can be supported and installed as indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Wood Trim Product: Accsys Technologies' s "Accoya" Wood
- B. Wood Characteristics:
 - 1. Wood Species: Radiata Pine
 - 2. Moisture Content: Less than 8 percent
 - 3. Acetylated Wood Properties:
 - a. Fire Rating, ASTM E84: Class "C"
 - 4. Face Surface: Surfaced (smooth)

2.2 INSTALLATION MATERIALS

- A. Joint Sealant / Adhesive: Modified Silicone Polymer (MSP) shall be provided at all cut joints as required by manufacturer.
- B. End grain sealer at all exposed end grain as recommended by wood manufacture and compatible with painted finish.
- C. Nails: Type 304 stainless steel.
- D. Screws: Type 304 stainless steel.
- E. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide stainless steel anchors and inserts, unless otherwise indicated. Provide lead expansion sleeves for drilled-in-place anchors.

2.3 FABRICATION, GENERAL

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- A. Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain measurements and verify dimensions, profiles, and details indicated for accurate fit. Ease edges to radius indicated for the following:
 - 1. Edges of Solid-Wood Members 3/4 Inch Thick or Less: 1/16 inch.
- B. Mill material to shapes and dimensions shown and exactly match existing woodwork at each location. Milling and shaping shall be clean and true with sharply cut moldings, arises, corners, etc. Allow for slight reduction in size in shop sanding to ensure matching of dimensions.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas. Back prime all sides as recommended by wood trim manufacture prior to installation.
- B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and back priming.

3.2 INSTALLATION

- A. Discard units of material that are unsound, warped, bowed, twisted, improperly treated, not adequately seasoned or too small to fabricate work with minimum number of joints or optimum jointing arrangements or that are of defective manufacturer with respect to surfaces, sizes or patterns.
- B. Install woodwork true and straight with no distortions. Shim as required with concealed shims.
- C. Scribe and cut woodwork to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts.
- D. Provide sizes, materials and designs as indicated or as specified herein. Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to the greatest extent possible. Stagger joints in adjacent and related members. Lock miter at exterior angles and cope at interior angles and at returns to produce tight fitting joints with full surface contact throughout length of joint. Use scarf joints for end-to-end joints. Make exterior joints water-resistant by installing Modified Silicone Polymer (MSP) as required. Fasten finish work with finish nails. Provide blind nailing where practicable. Set face nails for putty stopping.
- E. Machine sand exposed flat members and square edges. Machine finish semi-exposed surfaces. Construct joints to exclude water. In addition to nailing, glue joints of built-up items as necessary for weather-resistant construction. Shoulder joints in flat work.
- F. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk concealed fasteners and blind nailing as required for a complete installation. Use fine finishing nails for exposed nailing, countersunk and filled flush with finished surface.

3.3 RESTORATION

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- A. General: Restoration of exterior finish carpentry items includes epoxy consolidation and repair of deteriorated members, Dutchmen type repairs and member replacement as required.
- B. Provide Dutchman in an invisible manner at all areas where existing wood is missing or deteriorated so extensively to require replacement and to repair all gaps, openings and voids left by removal of any existing elements to be removed.
 - 1. Carefully cut out deteriorated or damaged wood to form hole with straight sides and sharp corners. End joints shall be scarf joints.
 - 2. Cut Dutchman to match hole in member to be patched. Grain shall run in same direction. Dutchman shall be slightly deeper than hole in existing member. Glue Dutchman in place with epoxy adhesive and clamp until set.
 - 3. Plane surface of Dutchman flush with surrounding existing wood, or, as in the case of ornament such as decorative cornices, column capitals, etc., carve to replicate original ornamental profiles. Sand to produce uniformly smooth surface without sandpaper marks or other imperfections.
- C. Remove all deteriorated, damaged or loose trim, components and sections of existing finish carpentry items as shown or implied on drawings and as required to accommodate new work.
- D. Furnish all necessary existing wood components to be matched for full or partial replacement to millwork shop for fabrication of new matching components.
- E. Provide new members matching original in dimensions and profiles. Provide uniformly smooth surfaces without marks from planer, shaper or sandpaper and without other imperfections.
- F. Repair all areas, components, pieces, etc., not removed and remaining in place that are damaged, blemished or otherwise require restoration. Rebuild all areas where existing work has been removed and replace missing portions, trim, pieces, etc., where indicated and as required with new matching material. Close all existing open joints at trim intersections and mitered corners by filling joints with approved glue and drawing joints tight. Modify, extend or alter existing related work as required to ensure proper match of new and existing work.

3.4 ADJUSTING AND CLEANING

- A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; replace woodwork where not possible to repair. Adjust joinery for uniform appearance.
- B. Clean woodwork on exposed and semiexposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.
- C. Refer to Division 09 "Painting" for final finishing of installed woodwork.
- D. Protection: Installer of finish woodwork shall advise Contractor of final protection and maintained conditions necessary to ensure that work will be without damage or deterioration at time of acceptance.

END OF SECTION 064013

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SECTION 071416 - COLD FLUID-APPLIED WATERPROOFING

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Acrylic waterproofing.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, and tested physical and performance properties of waterproofing.
 - 2. Include manufacturer's written instructions for evaluating, preparing, and treating substrate.
- B. Shop Drawings:
 - 1. Show locations and extent of waterproofing.
- C. Samples: For each exposed product and for each color and texture specified, including the following products:
 - 1. Flashing sheet, 8 by 8 inches.
 - 2. Membrane-reinforcing fabric, 8 by 8 inches.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Field quality-control reports.
- C. Sample Warranties: For special warranties.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

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1.6 FIELD CONDITIONS

- A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended in writing by waterproofing manufacturer.
 - 1. Do not apply waterproofing to a damp or wet substrate, when relative humidity exceeds 85 percent, or when temperatures are less than 5 deg F above dew point.
 - 2. Do not apply waterproofing in snow, rain, fog or mist, or when such weather conditions are imminent during application and curing period.
- B. Maintain adequate ventilation during application and curing of waterproofing materials.

1.7 WARRANTY

- A. Manufacturer's Special Warranty: Manufacturer agrees to repair or replace waterproofing that fails in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Fifteen (15) years from date of Substantial Completion.
- B. Installer's Special Warranty: By Installer, covering Work of this Section, for warranty period of two (2) years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Naming of manufacturer's proprietary product is for establishing quality level, performance standard and aesthetic effect only, and is not intended to imply that product named is required to be used to the exclusion of equivalent products of other manufacturers. Products of other manufacturers will be considered subject to compliance with specified requirements. Failure to meet any requirements relating to quality level, performance standard or aesthetic effect, as evaluated by the Architect, shall be sufficient reason for rejection.
- B. Acceptable Manufacturer: GAF, Commercial Roofing Products Division, which is located at: 1 Campus Drive; Parsippany, NJ 07054; Toll Free Tel: 800-ROOF-411; Tel: 973-628-3000; Fax: 973-628-3451; Email: technicalquestions@gaf.com; Web: www.gaf.com

2.2 PRODUCTS, COATINGS

- A. HydroStop® PremiumCoat® Finish Coat: An acrylic, permanently flexible, highly UV-resistant, chemical-resistant elastomeric compound fully reinforced with a tough stitch-bonded polyester fabric designed for roofing and flashing applications of all types.
 - 1. Color as selected by Owner from manufactures standard selections
- B. HydroStop® PremiumCoat® Foundation Coat: An acrylic, permanently flexible, highly UV-resistant, chemical-resistant elastomeric compound fully reinforced with a tough stitch-bonded polyester fabric designed for roofing and flashing applications of all types.
 - 1. Color as selected by Owner from manufactures standard selections

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2.3 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials recommended in writing by waterproofing manufacturer for intended use and compatible with one another and with waterproofing.
- B. Primer: Manufacturer's standard primer, sealer, or surface conditioner to adhere cold fluid applied waterproofing system to metal roof system.
- C. Flashing, Fabric and Bulking Agents: Manufactures standard products required for condition.
- D. Joint Reinforcing Strip: Manufacturer's recommended fiberglass mesh or polyester fabric.
- E. Joint Sealant: Multicomponent polyurethane sealant, compatible with waterproofing and as recommended by manufacturer for substrate and joint conditions.
 - 1. Backer Rod: Closed-cell polyethylene foam.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
 - 1. Verify that substrate is visibly dry and within the moisture limits recommended in writing by manufacturer. Test for capillary moisture by plastic sheet method according to ASTM D4263.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Preparation of the Roof substrate is the responsibility of the Installer. Installer shall address and correct all of the conditions listed in this section. Examine substrates to receive new roofing. Do not proceed with installation of the roofing system until unsatisfactory conditions have been corrected in a manner acceptable to the manufacturer.
- B. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.
- C. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- D. Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids.
- E. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, acid residues, and other penetrating contaminants or film-forming coatings from concrete.
- F. Remove fins, ridges, and other projections, and fill honeycomb, aggregate pockets, holes, and other voids.

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3.3 PREPARATION AT TERMINATIONS, PENETRATIONS, AND CORNERS

- A. Prepare surfaces at terminations and penetrations through waterproofing and at expansion joints, drains, sleeves, and corners according to waterproofing manufacturer's written instructions.
- B. Apply waterproofing in two separate applications, and embed a joint reinforcing strip in the first preparation coat when recommended by waterproofing manufacturer.

3.4 JOINT AND CRACK TREATMENT

- A. Prepare, treat, rout, and fill joints and cracks in substrate according to waterproofing manufacturer's written instructions. Before coating surfaces, remove dust and dirt from joints and cracks according to ASTM D4258.
 - 1. Comply with ASTM C1193 for joint-sealant installation.
 - 2. Apply bond breaker on sealant surface, beneath preparation strip.
 - 3. Prime substrate along each side of joint and apply a single thickness of preparation strip at least 6 inches wide along each side of joint. Apply waterproofing in two separate applications and embed a joint reinforcing strip in the first preparation coat.
- B. Install flashing and bond to deck and wall substrates where required according to waterproofing manufacturer's written instructions.
 - 1. Extend flashings four 8 inches minimum onto perpendicular surfaces and items penetrating substrate.

3.5 WATERPROOFING APPLICATION

- A. Apply waterproofing according to manufacturer's written instructions.
 - 1. Before applying the roofing, an adhesion test is required to ensure an adhesion minimum of 2.0 PLI.
 - 2. Tighten and/or replace existing fasteners.
 - 3. Pressure wash roof to ensure it is free of dirt, debris, oil, and other contaminants that could negatively affect adhesion. United Cleaning Concentrate (UCC) is recommended to clean the roof. Allow the roof to completely dry.
 - 4. Treat Seams according to the manufactures written instructions.
 - 5. Prime with appropriate primer.
 - 6. Encapsulate exposed fasteners
 - 7. Apply 2 Finish Coats at a rate recommended by the manufacture. Allowing drying time, and repairing all defects, flaws or areas of insufficient coverage between coats. Final dry film thickness shall be approximately 17 mils in the field of the roof. All unsatisfactory conditions must be repaired.

3.6 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a site representative qualified by waterproofing membrane manufacturer to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components.

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- B. Waterproofing will be considered defective if it does not pass tests and inspections.

3.7 PROTECTION

- A. Protect waterproofing from damage and wear during remainder of construction period.
- B. Protect installed insulation panels from damage due to UV light, harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.
- C. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.

END OF SECTION 071416

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SECTION 073129 – WOOD SHINGLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Wood shingles for roofing.
 - 2. Self-adhered breathable underlayment.
 - 3. Drainage mat.
- B. Related Sections include the following:
 - 1. Division 06 Sections "Rough Carpentry" for wood roof sheathing.
 - 2. Division 07 Section "Sheet Metal Flashing and Trim" for roof and chimney flashings and membrane underlayment.

1.3 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification:
 - 1. Wood shingles: Full size.
 - 2. Fasteners: one of each type.
- C. Qualification Data: For roof shingle and flashing Installers.
- D. Research/Evaluation Reports: For wood shingles.
- E. Maintenance Data: For wood shingles to include in maintenance manuals.
- F. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who is an approved affiliate member of CSSB.

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- B. Grading Agency Qualifications: An independent testing and inspecting agency recognized by authorities having jurisdiction as qualified to label wood shingles for compliance with referenced grading rules.
- C. Source Limitations: Provide shingles sustainably harvested as certified by FSC or approved equal rating agency. Obtain wood shingles through one source from a single manufacturer.
- D. Mockups: Build mockups of areas as selected by the Architect to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Approval of mockups is also for other material and construction qualities specifically approved by Architect in writing.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6. DELIVERY, STORAGE, AND HANDLING

- A. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls.
 - 1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
- B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.7 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing to be performed according to manufacturer's written instructions and warranty requirements.
 - 1. Install self-adhering membrane underlayment, breathable underlayment and drainage mat within the range of ambient and substrate temperatures recommended by manufacturer.

1.8 WARRANTY

- A. Special Warranty: CSSB's standard form in which CSSB agrees to repair or replace wood shingles that fail in materials within specified warranty period. Material failures include manufacturing defects that result in leaks.
 - 2. Material Warranty Period: 20 years for shingles, from date of Substantial Completion.
- B. Special Project Warranty: Roofing Installer's warranty, signed by roofing Installer, covering Work of this Section, in which roofing Installer agrees to repair or replace components of wood shingle roofing that fail in materials or workmanship within the following warranty period:
 - 1. Warranty Period: Five years from date of Substantial Completion.

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PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Naming of manufacturer's proprietary product is for establishing quality level, performance standard and aesthetic effect only, and is not intended to imply that product named is required to be used to the exclusion of equivalent products of other manufacturers. Products of other manufacturers will be considered subject to compliance with specified requirements. Failure to meet any requirements relating to quality level, performance standard or aesthetic effect, as evaluated by the Architect, shall be sufficient reason for rejection.

2.2 WOOD ROOF SHINGLES

- A. Smooth-sawn Western Yellow Cedar (also known as Alaskan Yellow Cedar or Western Cypress) shingles that meet or exceed the following requirements:
 - 1. Grade: No. 1 Blue Label Perfections (100% heartwood, 100% clear, 100% edge grained).
 - 2. Length: Tapered cut, 18 inches long.
 - 3. Widths: Minimum 4 inches, maximum 8 inches.
 - 4. Shingles shall be obtained from Ocean Mill or DeTeel Mill in British Columbia as provided by Liberty Cedar Exterior Wood Products, West Kingston, RI.

2.5 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.
- B. Roofing Nails: ASTM F 1667; 4d stainless-steel, sharp-pointed, and of sufficient length to penetrate a minimum of 3/4 inch into sheathing.
 - 1. Use ring shank nails for wood shingles.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
 - 1. Examine existing roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through roofing.
 - 3. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

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3.2 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."
 - 1. Install metal flashings according to wood roofing recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Step Flashings: Install with a head lap of 3 inches and extend over the underlying wood roofing and up the vertical surface. Install with lower edge of flashing just upslope of, and concealed by, butt of overlying shingle or shake. Fasten to roof deck only.
- C. Eave Drip Edges: Install beneath underlayment and fasten to roof deck.
- D. Rake Drip Edges: Install over underlayment and fasten to roof deck.

3.3 ROOF SHINGLE INSTALLATION

- A. Install wood shingle roofing according to manufacturer's written instructions, recommendations in CSSB's "Design and Application Manual for New Roof Construction," and recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- C. Install double-layer wood shingle starter course along lowest roof edge. Extend starter course 1 inch over fascia and 1 inch over rake edge.
 - 1. Offset joints of double-layer starter course a minimum of 1-1/2 inches.
- D. Install first course of wood shingles directly over starter course and in continuous straight-line courses across roof deck. Install second and succeeding courses of wood shingles in continuous straight-line courses across roof deck aligning with existing shingle coursing.
 - 1. Offset joints between shingles in succeeding courses a minimum of 1-1/2 inches, and min. 1" between alternating courses.
 - 2. Space shingles a minimum of 1/4 inch and a maximum of 3/8 inch apart. Limit alignment of vertical joints in every third course to not exceed 10 percent of joints.
 - 3. Fasten each shingle with 2 nails spaced 3/4 to 1 inch from edge of shingle and 1-1/2 to 2 inches above butt line of subsequent course. Drive fasteners flush with top surface of shingles without crushing wood.
 - 4. Maintain weather exposure of 5-1/2 inches for 18-inch-long shingles.

END OF SECTION 073129

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SECTION 076100 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
 - 1. Formed roof-drainage sheet metal fabrications.
 - 2. Formed wall sheet metal fabrications.
 - 3. Reglets and Counterflashings
 - 4. Low lead solder and flux system.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood deck.
 - 2. Section 079200 "Joint Sealants" for field-applied sealants adjoining sheet metal roofing and not otherwise specified in this Section.

1.3 COORDINATION

- A. Coordinate sheet metal roofing, flashing and trim layout and seams with sizes and locations of roof curbs, equipment supports, equipment provided, and roof penetrations.
- B. Coordinate sheet metal roofing, flashing and trim installation with rain drainage work, flashing, trim, and construction of roofing substrate, parapets, walls, and other adjoining work to provide leakproof, secure, and noncorrosive installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each of the following:
 - 1. Formed sheet metal.
 - 2. Roof Drainage Components
 - 3. Underlayment materials.
 - 4. Fasteners.
 - 5. Sealant tape.
 - 6. Elastomeric sealant.
 - 7. Butyl sealant.
- B. Shop Drawings:
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Detail fabrication and panel installation layouts, expansion joint locations, points of fixity, and keyed details. Distinguish between shop- and field-assembled Work.
 - 3. Include details for forming, including seams and dimensions, profiles and shapes.

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4. Include details for joining and securing, including layout and spacing of fasteners, cleats, and other attachments. Include pattern of seams.
5. Include details of expansion joints, including showing direction of expansion and contraction from points of fixity.
6. Include details of roof penetrations.
7. Include details of edge conditions, including eaves, ridges flashings, and counter flashings.
8. Include details of special conditions.
9. Include details of connections to adjoining work.

C. Samples: For each exposed product and for each color and texture specified, 12 inches long by actual width.

1. Flashing, Trim and Metal Closures: 12 inches long and in required profile. Include fasteners and other exposed accessories.
2. Copings, roof-edge, roof-edge drainage systems, reglets and counterflashings made from 12-inch lengths of full-size components in specified material, and including fasteners, cover joints, accessories, and attachments.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1. Include listing of completed projects of comparable scale of this Project, including name, address, telephone, and contact person for Architect, and name, address, telephone number, and contact person for building Owner.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing sheet metals and accessories to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Sheet Metal Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal roofing similar to that required for this Project and whose products have a record of successful in-service performance.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal materials in contact with other materials that might cause staining, denting, or other surface damage.

1. Store sheet metal materials away from uncured concrete and masonry.
2. Protect stored sheet metal materials from contact with water.

B. Protect strippable protective covering on sheet metal from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal roofing installation.

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1.9 FIELD CONDITIONS

- A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication, and indicate measurements on Shop Drawings.
- B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.10 WARRANTY

- A. Special Warranty: Warranty form at end of this Section in which Installer agrees to repair or replace components of sheet metal roofing that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

- a. Structural failures, including, but not limited to, rupturing, cracking, or puncturing.
- b. Wrinkling or buckling.
- c. Loose parts.
- d. Failure to remain weathertight, including uncontrolled water leakage.
- e. Deterioration of metals, metal finishes, and other materials beyond normal weathering, including nonuniformity of color or finish.
- f. Galvanic action between sheet metal roofing and dissimilar materials.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Sheet metal system, including, but not limited to, cleats, anchors and fasteners, sheet metal flashing integral with the roofing, fascia panels, trim, underlayment, and accessories, shall comply with requirements without failure due to defective manufacture, fabrication, or installation, or due to other defects in construction. Sheet metal shall remain watertight.
- B. Sheet Metal Roofing Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or indicated on Drawings.
- C. Copper Roofing Standard: Comply with CDA's "Copper in Architecture Handbook." Conform to dimensions and profiles shown unless more stringent requirements are specified or indicated on Drawings.
- D. SPRI Wind Design Standard: Manufacture and install [copings] and [roof-edge specialties] tested according to SPRI ES-1 and capable of resisting the following design pressures:
- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F , ambient; 180 deg F , material surfaces.

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2.2 SHEET METAL TRIM AND FLASHING

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Copper Sheet: ASTM B370 cold-rolled copper sheet, H00 temper.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Revere Copper Products, Inc.
 - 2. Weight (Thickness): 20 oz./sq. ft. unless noted otherwise

2.3 UNDERLAYMENT MATERIALS

- A. Membrane Underlayment - Self-Adhering, High-Temperature Sheet Underlayment: Minimum 30 mils thick, consisting of a slip-resistant polymeric-film top surface laminated to a layer of rubberized asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. GCP Applied Technologies Inc.; Grace Ice and Water Shield HT. or equal
 - 2. Thermal Stability: ASTM D1970/D1970M; stable after testing at 240 deg F or higher.
 - 3. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F or lower.
- B. Fabric Underlayment: Triple layer, spun bonded polypropylene, breathable membrane with integral tape edges, self-sealing around fasteners, UV-resistant, UL-Class A fire-rated, complying with ASTM D226 and D4869, mechanically fastened.
 - 1. Manufacturers and Products: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. VaproShield USA; SlopeShield, with integrated tape.
- C. Rosin Paper: Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.
 - 1. WR Meadows Red Rosin Paper
 - 2. Trimaco Red Rosin paper

2.4 ROOF-EDGE DRAINAGE SYSTEMS

- A. Manufacturers: Subject to compliance with requirements provide the following:
 - 1. Berger Building Products
- B. Gutters: Manufactured in uniform section lengths not exceeding 12 feet with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least 1 inch above front

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edge. Furnish flat-stock gutter straps, gutter brackets, expansion joints, and expansion-joint covers fabricated from same metal as gutters.

1. Copper Sheet: 20 oz./sq. ft.
 2. Gutters as indicated on drawings and according to SMACNA's "Architectural Sheet Metal Manual."
 3. Gutter Profiles: 5" Half-round
 4. Gutter Supports: Model CCC105 #10 combination circle and shank with spring clip for adjustable fascia anchored support with finish matching the gutters.
 5. Gutter Accessories: Bronze wire ball downspout strainer and End caps.
- C. Downspouts: complete with machine-crimped elbows, in material to match gutters. Furnish with metal hangers, from same material as downspouts, and anchors.
1. Copper Sheet: 20 oz./sq. ft.
 2. Gutters as indicated on drawings and according to SMACNA's "Architectural Sheet Metal Manual."
 3. 4" dia. Smooth Round
 4. Rainwater Pipe Cleanout at each downspout where downspout connects to subsurface drainage system.
- D. Copper Finish: Natural.

2.5 REGLETS AND COUNTERFLASHINGS

- A. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, from the following exposed metal:
1. Copper: 16 oz./sq. ft.
 2. Masonry Type, Embedded: Provide reglets with offset top flange for embedment in masonry mortar joint.
- B. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches minimum or greater if indicated on drawings and in lengths not exceeding 12 feet designed to snap into reglets or through-wall-flashing receiver and compress against base flashings with joints lapped, from the following exposed metal:
1. Copper: 16 oz./sq. ft.
- C. Accessories:
1. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing lower edge.
- D. Copper Manufacture: Revere Copper Products, Inc.

2.6 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete roofing system and as recommended by primary sheet metal manufacturer unless otherwise indicated.
- B. Fasteners: Wood screws, annular-threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.

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1. Fasteners for Copper Sheet: Copper, hardware bronze, or passivated Series 300 stainless steel.
- C. Solder and Flux:
 1. For Copper ASTM B32, with maximum lead content of 0.2 percent
 2. Products: Subject to compliance with requirements provide the following:
 - a. Johnson Mfg Co #497 Alloy
 - b. Superior Flux and Mfg Co Superior Ruby Fluid
 - c. Johnson Mfg Co E-127 Flux and Solder
- D. Elastomeric Sealant: ASTM C920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal roofing and remain watertight. See Section 079200 Joint Sealants for approved products.

2.7 ACCESSORIES

- A. Sheet Metal Accessories: Provide components required for complete sheet metal assembly, including trim, fascia, corner units, clips, flashings, sealants, gaskets, fillers, metal closures, closure strips, and similar items.
 1. Cleats: Intermittent and continuous attachment devices for mechanically seaming into joints and formed from the following materials and thicknesses unless otherwise indicated:
 - a. Copper Roofing: 20- oz./sq. ft. copper sheet.
 2. Expansion-Type Cleats: Cleats of a design that allows longitudinal movement of roof panels without stressing panel seams; of same material as other cleats.
 3. Backing Plates: Plates at roofing splices, fabricated from material recommended by SMACNA's "Architectural Sheet Metal Manual."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 1. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking, that tops of fasteners are flush with surface, and that installation is within flatness tolerances required for finished roofing installation.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored, and that provision has been made for drainage, flashings, and penetrations through sheet metal roofing.
 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.

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- C. Examine roughing-in for components and systems penetrating sheet metal roofing to verify actual locations of penetrations relative to seam locations of sheet metal roofing before installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Lay out panel arrangement, and before installation of sheet metal.
 - 1. Space fasteners not more than 18 inches o.c.

3.3 UNDERLAYMENT INSTALLATION

- A. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, according to manufacturers' written instructions, using adhesive where possible to minimize use of mechanical fasteners under sheet metal.
 - 1. Lap horizontal joints not less than 4 inches.
 - 2. Lap end joints not less than 12 inches.
- B. Self-Adhering High-Temperature Sheet Underlayment:
 - 1. Install self-adhering high-temperature sheet underlayment, wrinkle free.
 - 2. Prime substrate if recommended by underlayment manufacturer.
 - 3. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures.
 - 4. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses.
 - 5. Overlap side edges not less than 3-1/2 inches.
 - 6. Roll laps and edges with roller.
 - 7. Cover underlayment within 14 days of installation.
 - 8. Install self-adhering high-temperature underlayment as indicated on drawings:
- C. Install slip sheet, wrinkle free, over underlayment before installing sheet metal roofing and related flashing.
 - 1. Install in shingle fashion to shed water, with lapped joints of not less than 4 inches.

3.4 INSTALLATION, GENERAL

- A. Install sheet metal to comply with details shown and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to installation characteristics required unless otherwise indicated on Drawings.
 - 1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required for complete roofing system.
 - 2. Install sheet metal true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder and sealant.
 - 3. Anchor sheet metal and other components of the Work securely in place, with provisions for thermal and structural movement.
 - 4. Do not field cut sheet metal by torch.

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5. Provide metal closures as required to close all open flashing ends to provide a watertight system.
 6. Flash and seal sheet metal roofing with closure strips at eaves, rakes, and perimeter of all openings. Fasten with self-tapping screws.
 7. Locate and space fastenings in uniform vertical and horizontal alignment. Predrill panels for fasteners.
 8. Lap metal flashing over sheet metal roofing to direct moisture to run over and off roofing.
- B. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 4. Torch cutting of roof specialties is not permitted.
- C. Thermal Movement: Rigidly fasten metal roof panels to structure at only one location for each panel.
1. Allow remainder of panel to move freely for thermal expansion and contraction.
 2. Point of Fixity: Fasten each panel along a single common line of fixing located at eave ridge or center of panel length.
 3. Avoid attaching accessories through roof panels in manner that inhibits thermal movement.
- D. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise indicated on Drawings.
 2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- E. Fasteners: Use fastener sizes that penetrate [wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws] [substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance] <Insert size requirement>.
- F. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by applying self-adhering sheet underlayment to each contact surface, or by other permanent separation as recommended in SMACNA's "Architectural Sheet Metal Manual."
- G. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

3.5 ROOF-EDGE SPECIALITIES INSTALLATION

- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.

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- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

3.6 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION

- A. General: Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Gutters: Join and seal gutter lengths. Allow for thermal expansion. Attach gutters to firmly anchored gutter supports spaced not more than 24 inches apart. Attach ends with rivets and [seal with sealant to make watertight. Slope to downspouts.
 - 1. Install gutter with expansion joints at locations indicated but not exceeding 50 feet apart. Install expansion-joint caps.
- C. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c.
 - 1. Provide elbows at base of downspouts at grade to direct water away from building.
 - 2. Connect downspouts to underground drainage system indicated.

3.7 REGLET AND COUNTERFLASHING INSTALLATION

- A. General: Coordinate installation of reglets and counterflashings with installation of base flashings.
- B. Embedded Reglets: See [Section 033000 "Cast-in-Place Concrete"] [and] [Section 042000 "Unit Masonry"] for installation of reglets.
- C. Counterflashings: Insert counterflashings into reglets or other indicated receivers; ensure that counterflashings overlap 4 inches over top edge of base flashings. Lap counterflashing joints a minimum of 4 inches and bed with butyl sealant. Fit counterflashings tightly to base flashings.

3.8 ACCESSORY INSTALLATION

- A. Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion.
 - 1. Coordinate installation with flashings and other components.
 - 2. Install components required for complete sheet metal roofing assembly, including trim, seam covers, flashings, sealants, gaskets, fillers, metal closures, closure strips, and similar items.
 - 3. Install accessories integral to sheet metal roofing that are specified in Section 076200 "Sheet Metal Flashing and Trim" to comply with that Section's requirements.
- B. Flashing and Trim: Comply with performance requirements and SMACNA's "Architectural Sheet Metal Manual."
 - 1. Provide concealed fasteners where possible, and install units true to line, levels, and slopes.

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2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
3. Install flashing and trim as required to seal against weather and to provide finished appearance, including, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers.
4. Install continuous strip of self-adhering underlayment at edge of continuous flashing overlapping self-adhering underlayment, where "continuous seal strip" is indicated in SMACNA's "Architectural Sheet Metal Manual" and on Drawings.
5. Install exposed flashing and trim without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
6. Install sheet metal flashing and trim to fit substrates, and to result in waterproof and weather-resistant performance.
7. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
 - a. Space expansion joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
 - b. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, and filled with butyl sealant concealed within joints.
 - c. Use lapped expansion joints only where indicated on Drawings.

3.9 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal roofing within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- B. Installation Tolerances: Shim and align sheet metal roofing within installed tolerances specified in MCA's "Metal Roof Installation Manual."

3.10 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. On completion of sheet metal roofing installation, clean finished surfaces as recommended by sheet metal roofing manufacturer.
- C. Clean and neutralize flux materials. Clean off excess solder.
- D. Clean off excess sealants.

3.11 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal roofing is installed unless otherwise indicated in manufacturer's written installation instructions.
- B. Prohibit traffic of any kind on installed sheet metal roofing.
- C. Maintain sheet metal roofing in clean condition during construction.

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- D. Replace sheet metal roofing components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076100

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SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes sealants for the following applications. Including those specified by reference to this section.

- 1. Exterior joints in the following vertical surfaces and nontraffic horizontal surfaces:
 - a. Joints between metal or wood and masonry.
 - b. Joints between different materials listed above.
 - c. Perimeter joints between materials listed above and frames of doors and windows.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint sealants without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.
- C. Warranties: Sample of special warranties.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

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1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multi-component materials.
- B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
 - 2. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F(5 deg C).
 - 3. When joint substrates are wet.
 - 4. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 5. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.8 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Three (3) years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Twenty (20) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

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2.2 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
 - 1. Sealant for use in masonry reglet joints: Dow Corning 790 (or equal) Silicone Building Sealant, ultra-low modulus, one part, non-sag, non-staining, neutral cure silicone sealant, complying with ASTM C 920, Type S, Grade NS, Class 100/50.
 - 2. Paintable Sealant: Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
 - a. "Sonolac," BASF Building Systems;
 - b. "AC-20+," Pecora Corporation
 - c. "Tremflex 834," Tremco Incorporated

2.3 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

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PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.

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3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
 - D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
 - E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
 - F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
 4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
 5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.
- 3.4 CLEANING
- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.
- 3.5 PROTECTION
- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079200

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SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
 - 1. New and Existing Wood Trim to be prepared and painted.
 - 2. New wood trim to be painted.
- B. Related Requirements:
 - 1. Section 064013 "Exterior Architectural Woodwork"
 - 2. Section 072900 "Joint Sealants"

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples for Verification: For each type of paint system and each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, 8 inches square.
 - 2. Apply coats on Samples in steps to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- C. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.4 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

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2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.6 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide product listed in the Exterior Painting Schedule for the paint category indicated.

2.2 PAINT, GENERAL

- A. Material Compatibility:
 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- B. Colors: As selected by Owner.

2.3 PRIMERS

- A. Primers: Provide the manufacturer's recommended factory-formulated primers that are compatible with the substrate and finish coats indicated.
- B. Products: Subject to compliance with requirements, provide the following:

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1. Exterior Wood Primer Coating: Exterior, alkyd wood primer.
 - a. Sherwin-Williams: Laqvin Proof ED1401 Primer.

2.4 PAINT – FINISH COATS

- A. Paint: Provide the manufacturer's recommended factory-formulated paint that is compatible with the selected primer.
- B. Products: Subject to compliance with requirements, provide the following:
 1. Exterior Wood Finish Coating: Exterior, acrylic wood paint.
 - a. Sherwin-Williams: Laqvin Top EG1598.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 1. Wood: 15 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

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D. Paint preparation of wood surfaces:

1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
5. Countersink steel nails, if used, and fill with putty or plastic wood filler tinted to final color. Sand smooth when dried.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
1. Use applicators and techniques suited for paint and substrate indicated.
 2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
 3. Paint entire exposed surface of window frames and sashes.
 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
1. Contractor shall touch up and restore painted surfaces damaged by testing.
 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

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- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

- A. Wood Substrates: Wood trim, Architectural woodwork, Windows, and Wood board siding.
 - 1. 1 coat of Wood Primer (see products)
 - 2. Minimum 2 finish coats of paint (see products)

END OF SECTION 099113